Lectures

ON

THE DIAGNOSIS AND TREATMENT OF THE PRINCIPAL FORMS OF PARALYSIS OF THE LOWER EXTREMITIES.

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LECTURE IV.—(PART II.)

SYMPTOMS AND TREATMENT OF VARIOUS FORMS OF PARAPLEGIA DUE TO WHITE SOFTENING, HÆMORRHAGE, TUMOURS, ETC.—GENERAL CONCLUSIONS OF THE COURSE.

Causes of the variety in the symptoms of tumour of the spinal cord.—Myelitis a frequent complication of tumour upon or in the spinal cord.—Injury of a lateral half of the spinal cord by a tumour.—Symptoms of a tumour in the grey matter of the spinal cord.—Differences between paraplegia due to a tumour and paraplegia caused by myelitis or meningitis.—Prognosis of paraplegia caused by a tumour.—Treatment of paralysis due to a tumour of the spinal cord.

THERE is no affection of the spinal cord or its membranes that presents such varied symptoms as tumours. According to the seat of the tumour, there are symptoms of disease of the heart, the lungs, the walls of the chest or of the abdomen, lumbago, neuralgia, &c. The irritation of the anterior or the posterior roots of one or several pairs of the spinal nerves is the cause of these symptoms, and their variety depends upon the degree of irritation, and also upon the nerve that is irritated. In the beginning of the affection, besides some symptom owing to that cause, there is pain at the part of the spine where the tumour is situated. Usually this pain is increased by pressure on the spine. When the disease progresses, myelitis, and sometimes meningitis, are produced. If it be myelitis, which is a very frequent occurrence, there are sensations of formication or of pricking, as if with pins and needles, in the paralysed limbs; spasmodic movements or simple twitchings, or a great rigidity appear in those limbs; the urine becomes alkaline, and sloughs or bullæ are formed on the sacrum or the nates. The feeling of a cord tied round the body or round the paralysed limbs is perceived. The pain in the spine notably increases.

If a meningitis is produced by the irritation of a tumour in the vertebral canal, there is a rapid increase of the paralysis; any movement of the spine or of the lower limbs causes a very acute pain; the muscles of the back become rigid spasmodically, especially when the spine or the lower limbs are moved.

If no inflammation of the spinal cord or its membranes is produced by a tumour, the symptoms are very similar to those of a non-inflammatory softening, with this difference, that there is pain in the spine, and also the effects of the irritation of the pair or pairs of nerves, originating where the tumour lies in the vertebral canal. When the tumour has destroyed a part of the spinal cord, there are symptoms that vary according to the part so injured. If it be a lateral half of that organ, there is loss of voluntary movement in the corresponding limb, with conservation of sensibility, while in the other limb there are loss of sensibility and conservation of voluntary movement.*

I have lately seen a case of this kind, as far as I can judge from the symptoms. Several periostic (syphilitic) tumours appeared one after the other on the head and face of a gentleman, who, on their disappearance, was attacked with paraplegia, apparently caused by a similar tumour pressing upon the right side of the spinal cord, and producing paralysis in the lower limb of that side and anæsthesia in the left lower limb.

If the grey matter of the cord be the original seat of a tumour, there are at first numbness and diminution of the power of the will over the bladder, with weakness of the lower limbs. Afterwards, paralysis becomes evident in these limbs, and anæsthesia, in a much more marked degree than usual in diseases of the spinal cord, is observed, together with a loss of the power of directing movements.

If the posterior columns of the spinal cord are alone pressed upon by a tumour, there is at first hyperæsthesia, with but a slight diminution of the voluntary movements in the lower limbs; afterwards, when the pressure reaches the grey matter, diminution of sensibility and of the power of the will over the bladder, and increase of the paralysis of the lower limbs. A very interesting symptom—i. e., the loss of the power of guiding the movements of the lower limbs—may be observed in cases of a tumour pressing upon the lower extremity of the spinal cord on its posterior surface. There may be in such cases no real paralysis, or at least all the movements of the various parts of the lower limbs are possible *so long as the patient can see them;* but when he tries to move these limbs in the dark, or when he does not look at them, he cannot succeed in making the movement he wishes to perform. Besides, he does not know where his feet or legs are, unless he looks at them or touches them with his hands. He may be able to stand on his feet when he sees them; but if he ceases to look at them, he is at once in danger of falling down. This condition depends upon the alteration of some of the posterior roots of nerves, and of the posterior white and grey parts of the spinal cord, producing partial anæsthesia of the skin and muscles of the feet and legs. I have now a case of this kind under my care.

In cases of tumour in or upon the spinal cord, epileptiform convulsions have often been observed. Sometimes, also, real epileptic fits, with loss of consciousness, biting of the tongue, foaming at the mouth, &c., are produced in such cases.* This is what has been erroneously called *spinal epilepsy*.

I need not say that the nature of a tumour will sometimes serve for the detection of its existence. A cancer, by the general symptoms it causes, will give some additional ground to the supposition that there is a tumour in the spinal canal. If the patient is consumptive, and if the paraplegia has been slow in its development, there is some probability that the tumour supposed to exist in the spinal cord is a tubercle.

Diagnosis of Paraplegia due to a Tumour of the Spinal Cord.—The only affections which might be mistaken for this kind of paraplegia are meningitis and myelitis. A very limited meningitis localised in the upper part of the dorsal region or in the cervical region might give rise to pretty nearly all the symptoms of a tumour of the spinal cord: local pain (spontaneous and after pressure); sensations of heat or cold, or pricking, &c., in the peripheric part of the nerves, originating where the meningitis or the tumour exists; spasmodic twitchings in the muscles animated by these nerves, &c. In a case of meningitis so localised there is paralysis of the lower limbs, on account of the effusion which presses upon the spinal cord in its lower extremity; and the same cause that produces a paralysis diminishes the reflex power of the dorso-lumbar part of the spinal cord. On the contrary, the whole of the cord below the seat of a tumour, remaining healthy and being separated from the brain, acquires a very energetic reflex power, and the least excitation produces reflex spasms or convulsions in the lower limbs.

Between cases of tumour upon the lumbar part of the spinal cord, and cases of meningitis limited to the lumbar part of the meninges, the diagnosis is extremely difficult. However, there are more spasms in the muscles of the limbs in the case of a tumour, and more in the muscles of the back in the case of meningitis. Besides, in this last case, the affection would often begin by acute symptoms—fever, &c.; and the paralysis would soon extend to other muscles than those of the lower limbs.

We have described in Lecture II. the various symptoms of myelitis localised in the upper part of the dorsal region, or higher up. It is not very difficult to distinguish this affection from the paraplegia due to a tumour, so long as no degree of inflammation has been produced in the spinal cord by the irritation of the tumour. Amongst the characteristic symptoms which would not be observed in the lower limbs, if there is a tumour and no inflammation of the spinal marrow, are all the referred sensations of pricking, formication, cold and heat, &c. But if a local myelitis is produced by a tumour in the upper

* Several cases of this kind have been published. (See my Lectures on the Central Nervous System. Philadelphia, 1860, pp. 93—111.)

* See my "Researches on Epilepsy," p. 11.

part of the dorsal region, or higher up, leaving all the lower part of the cord healthy, the symptoms will be the same as those of a localized myelitis without a tumour. It is only by the mode of beginning of these two affections that it would be possible to distinguish one from the other. In the case of myelitis without a tumour, various sensations and cramps in the lower limbs would have existed from the very commencement; while in the case of a tumour preceding myelitis there would be none of these symptoms in the lower limbs.

Prognosis of Paraplegia due to a Tumour of the Spinal Cord.—We need not speak of the gravity of paraplegia caused by a cancer or a tubercle. The chances of cure, or even of a notable amelioration, when other kinds of tumours, except one, press upon the spinal cord, are almost null. But it is well to know that the duration of life may be prolonged many years, and the degree of paralysis may remain very long unchanged. Tumours owing their origin to syphilis form an exception to the above rule. A cure is possible, and generally a notable amelioration will be observed after the proper treatment is continued long enough. However, even in cases of this kind, if the injury to the spinal cord is considerable, the cure of course cannot be complete, and the amelioration cannot be very great.

Treatment of Paraplegia due to a Tumour of the Spinal Cord.—The rules to be followed may be reduced to three:—

1st. The congestion and the tendency to inflammation ought to be treated by the same means that should be employed in cases of myelitis. In a patient now under my care, who has all the symptoms of a cancerous tumour in the middle of the dorsal region, and who is completely paraplegic as regards voluntary movement, sensibility, and power over the bladder and rectum, I have succeeded in diminishing the pain in the back and the referred pain in the lower limbs, and also the spasms of the paralysed muscles, by the application of a large belladonna plaster on the back, and by the internal use of ergot of rye and belladonna. If there are symptoms of meningitis, together with those directly due to a tumour, the patient must take iodide of potassium, besides the other remedies just named. The spasmodic rigidity of the lower limbs, or the wasting of the muscles, in the rare cases where there is no cramp, no convulsions, and no spasmodic rigidity, requires the application of shampooing or galvanism to the muscles of the lower limbs. Dry-cupping on the painful spot of the spine, or other modes of revulsion, may be found useful to diminish the pains and spasms, and also to prevent a rapid progress of the disease. Strychnine should be avoided, as it would certainly increase both the pains and the spasms.

2ndly. If there is a probability that the tumour is of a syphilitic nature, iodide of potassium, in larger doses than if there were a simple meningitis, should be the principal remedy; five grains three times a day is the dose I have employed, with marked benefit, in two cases of this kind. This remedy ought to be taken for at least six months. Against the pain in such a case I employ aconite rather than belladonna, both externally and internally (from five to ten minims of the tincture a day internally). But I make use of ergot of rye as much as in other cases of tumour. If there is the appearance that the tumour is a tubercle, cod-liver oil is to be given. It cannot prove injurious, even if the paraplegia is not due to a tubercle, and it may diminish the pain.

3rdly. The patient ought to have the most nourishing diet, and a little wine. He ought to take exercise in the open air, and drive if he cannot walk. In bed he should lie on one side of the body, and not on the back. His appetite and digestion ought to be carefully watched, and kept right by tonics, aperients, &c.

CONVALESCENT BRANCH HOSPITALS. — The question naturally arises whether, in contributing to a "County Hospital," one has done one's whole duty in this matter. Healthy people do not thrive very well if they sleep amongst sick people. Is it rational to imagine that convalescents can do so either? Would it not appear a main point in regard to all hospitals in populous districts for each to have its convalescent branch at a convenient distance in the open country, into which recovering cases should be drafted from the hospital wards as speedily as possible? My own conviction is that, next to removing hospitals entirely out of towns, there is nothing that would add so much to the efficiency of these institutions, or at the same time be so great a blessing to the sick poor, as henceforth to look on convalescence as a state as much requiring its special conditions and management as sickness; and to provide for it accordingly. — *Miss Nightingale's Notes on Nursing* (New Edition).

A Course of Lectures
ON
PAIN,
AND THE
THERAPEUTIC INFLUENCE OF MECHANICAL AND PHYSIOLOGICAL REST
IN
ACCIDENTS & SURGICAL DISEASES.

Delivered in the Theatre of the Royal College of Surgeons.

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LECTURE V.—(PART I.)

MR. PRESIDENT AND GENTLEMEN,—When referring to the subject of pain the other day, I endeavoured to show its value as a means of diagnosis, in especial reference to the detection of disease situated remotely from the part where the pain is expressed. I have little doubt that my observations seemed to be rather wide of the ultimate object which I had in view—viz., the consideration of pain in its relation to the diseases of the spine. But I must claim your indulgence when I remind you that part of the object of these lectures is to consider the influence of physiological as well as mechanical rest; therefore, the point which I brought before you, in relation to the fifth nerve, was, I think, within the area of my intention, as an evidence of physiological disturbance leading to remotely situated structural disturbance. I will now, however, confine my observations to the subject of *pain as a local symptom* in its relation to diseases of the spine; and, in order to carry your attention with me, I will, for the sake of brevity, endeavour to reduce my views to the form of a proposition—a proposition admitting of qualification, it is true, but it may assist your apprehension of my meaning. I would state, then,

That superficial pains on both sides of the body, which are symmetrical, imply an origin or cause the seat of which is central or bilateral; and that unilateral pain implies a seat of origin which is one-sided, and, as a rule, exists on the same side of the body as the pain.

This is an important stand to take in endeavouring to unravel any obscure case through the medium of local pain. I must therefore repeat that in cases of symmetrical pains on the surface of the body, without the local manifestation of inflammation by an increased temperature of the parts, the cause must be central; and that if the pain be felt on one side only, the cause is only on one side, and it is on the same side of the body as the pain.

Associated with disease in the lower cervical, or the lumbar or dorsal vertebræ, the pains are almost always symmetrical, whilst in diseases between the occiput and atlas, or between the atlas and the second vertebra (the vertebra dentata) it often happens that the pains are unilateral, or one-sided. The probable ground of this peculiarity is, that the disease of the spine which occurs between the occiput and first vertebra, or between the first and second vertebræ, may attack and confine itself to one of the joints between these bones; whilst a disease of the lower cervical and dorsal and lumbar vertebræ generally involves the whole of the body of the vertebræ, or the whole of the intervertebral substance.

I detailed the other day two or three cases showing that, notwithstanding the strikingly marked symmetry of these spinal pains on the surface of the body, especially over the abdomen, they were not properly interpreted, and consequently that such cases were often treated erroneously by being thought to depend upon some abdominal disturbance. I will now mention two or three other cases of a similar description. One is very characteristic, and I have the notes of it from the gentleman in attendance. I purposely abstain from mentioning the name or the locality.

Case of Diseased Spine, with Symmetrical Abdominal Pains.

E. A——, aged four years and a half, a moderately robust girl, with a rather strumous diathesis, always enjoyed good health until about a year ago, when she began to lose flesh; her countenance became anxious, she stooped a little in walking, complained of symmetrical pains in her stomach and belly, and soon became fatigued. She was under medical treatment for some time for the abdominal affection without benefit. In consequence of the continuance of these symptoms, she was sent to the sea-side. The surgeon, there in attendance, assured the parents that she was suffering from a slight stomach derangement, and physicked her accordingly. One month subsequent to this period the child returned home much reduced in strength and flesh, and unable to walk about, from spasmodic pinching pain in the abdomen, which doubled her up. In a short time, however, having been kept quiet in bed, she recovered her flesh and strength, so as to be enabled to walk about a little without pain. Quickly again all the untoward symptoms supervened; the abdomen became large and tumid, bowels irregular, with pain in the belly, as if a cord were tied round the abdomen. (This sensation of a cord around the abdomen is very significant, and is usually suggestive of spinal mischief. A gentleman whom I saw from the neighbourhood of Norwich with a disease of the spine, in detailing his case to me, said, "Did you ever see any of those Italian fellows, with monkeys on boards dancing to music with a cord or piece of leather strapped tight around the belly and loins? That is just how I felt"—giving one an idea of the pinching and contracted condition of the abdomen which he had experienced.) The advice of another surgeon was obtained, who assured the parents that the mesenteric glands were affected. The urine was at that time phosphatic and ammoniacal. She was allowed to go about as usual. In a short time the alteration and unsteadiness of gait became more marked, and the other symptoms continuing she was taken to London to see a surgeon, (not myself,) who told the parents that the child was suffering from angular curvature of the spine. The child was placed in a recumbent position, and I was consulted. I saw this patient on March 19th, 1860, when there was evidence of disease of the eighth and ninth dorsal vertebræ, with slight projection backwards. The urine was now healthy. Uninterrupted rest in the recumbent position was ordered, with no medicine at all. It had recently been remembered (this is one of the important points) that the child, about a year ago, fell out of bed upon her back,—a distance of about two feet,—and that her abdominal symptoms began about three months afterwards. This I take as another illustration of what I have generally found, that almost all these diseases of the spine are the result of slight accidents overlooked. On May 15th the child was lying down, and was reported to be in excellent health and spirits, having no untoward symptoms. It was then intended that the child should lie down two or three months longer, and we assume that, if on resuming exercise it be gradual and steady, she will be cured, and cured by rest.

It is apparent that in this case the original real cause was altogether overlooked; that the abdominal symptoms were treated as depending on some error in the abdominal viscera, when they merely depended on the spine, and the spinal condition was for a time altogether ignored. I do not mention this case by way of casting imputation on any one. We all improve our professional knowledge by observation and experience, and this is a point of experience.

A little while ago, Mr. Sewell, a surgeon in Lambeth, reminded me of a like case that I had seen with him nine years ago. It was the case of a little girl, six years of age, with symptoms as nearly as possible like those I have just detailed. There was disease in the lower dorsal vertebræ, with slight projection backwards, and psoas abscess fluctuating just below Poupart's ligament. She got perfectly well by six months' rest, and the abscess has never shown itself since. It gradually receded: I presume it has been absorbed. She is now at school, perfectly well in every respect, except a slight vertebral deformity.

I direct your attention to these two or three cases, especially because, in childhood, there is oftentimes very great difficulty in detecting the real position of the pain of which such young children complain. When we see an adult, or a person advanced in life, he is able to express the precise position of the pain which he feels, and may, perhaps, be able to indicate the depth of the pain, so as to enable us to get at the real cause.

No cases of diseased spine are so immediately dangerous to life as those in the upper part of the cervical region, especially if situated between the first and second cervical vertebræ. I believe if surgeons will examine carefully the pains of which such patients complain, and use them as a means towards the right interpretation of the probable seat of the real disease, and then adopt, in a most positive and determined manner, the proper treatment by rest, the majority of these cases will do well.

I shall now endeavour to sustain this opinion by detailing some cases.

Disease of the Spine, with Pain on the Back of the Head.

About fourteen years ago I saw, in consultation with the late Dr. Bright, a gentleman, aged twenty-eight, who had been suffering for some time from pain at the back part of his head, which was thought to be rheumatic, and had been treated medically without any benefit. The cause of the pain was the question to be decided. Dr. Bright entertained an opinion that pain at the back of the head resulted sometimes from the close proximity of the vertebral artery to the sub-occipital nerve between the occiput and the atlas, or to the great occipital nerve, between the atlas and axis, and that the pressure of the artery upon one of these nerves produced the pain at the back of the head; and herein is the chief reason for my mentioning this individual case, because I believe the explanation will not hold good as regards the sub-occipital nerve, for that nerve rarely sends normally any filaments to the skin beyond the muscles, indeed it is chiefly a motor nerve coming off only from the anterior part of the spinal marrow. The great occipital nerve supplied the skin where the pain was felt by this gentleman, (*vide* Fig. 11, *a'*,) and on tracing this nerve towards the spine, we came to the cause—viz., disease between the first and second cervical vertebræ. The patient was ultimately cured by continued rest in the nearly horizontal position; the cure, however, consisted in complete anchylosis of the bones, and a fixed neck, with the head turned somewhat downwards and towards the left side. This patient died from pulmonary consumption twelve years after his recovery from his disease of the spine.

Disease of the Spine, with Pain at the Back of the Head and over the left Shoulder and in left Arm.

In the autumn of 1857 I was consulted by a lady from one of the Midland Counties, respecting the pain she experienced on the back of her head and ear, and upon the shoulder of the left side, with loss of power and pain in her left arm. I was told that these symptoms had come on about Christmas-time of the past year, without any known cause. She had from the first submitted to constant medical treatment, and not improving, had been then sent to Cromer, in Norfolk, on the sea-side, to improve her general health, and with the hope of getting rid of these supposed hysterical or rheumatic symptoms. She remained at the sea-side during the whole of the summer without any benefit. When I saw this lady in the autumn of 1857, her age was about thirty; she had pains on the left side, at the back of the head, and at the posterior part of the external ear; pain over the clavicle and shoulder, (all on the left side;) pain, with loss of power, in the left arm; pain deep in the neck on pressing the head directly downwards upon the spine, and on rotating the head; some fulness and tenderness on pressure about the first, second, and third cervical vertebræ, especially on the left side. She could not take walking exercise, in consequence of the increasing severity of all the symptoms. She had almost sleepless nights, and her appetite was very bad. Expecting to learn that she had had some accident, I was particular in my inquiries on that head, but nothing of the kind was admitted by the patient. It was obvious that there existed some disease or injury of the spine affecting the occipital nerves, (see Fig. 11, *a'*, *b'*,) the third cervical nerves, and the nerves forming the left axillary plexus. As far as I could interpret the case, rest appeared to be the proper remedy. The patient maintained almost uninterruptedly the recumbent position during nearly three months, two sand-bags, like those before me, being placed one on each side of the head. You will excuse my bringing forward these sand-bags, but they are not sufficiently used. They are useful in cases of fracture, for the purpose of sustaining the fractured parts in a right position. They are also extremely useful in the kind of case which I am now detailing, and eminently serviceable in cases of disease of the spine in children when situated high in the neck. Every practical surgeon knows how difficult it is to keep the neck and head of a child quiet and in the recumbent position, when suffering from disease of the cervical portion of the spine. I know of no simple mechanical means answering this purpose so well as sand-bags, such as I now place before you, made of bed-tick, and about three-fourths filled with dry sand. One is to be placed on each side, close to the head and neck, so as to be moulded to

them, in order to keep the head straight, and to render lateral or rotatory movements impossible. As I have said, two heavy sand-bags were placed, one on each side, upon the pillow, supporting the head of this lady. The only medicine employed was one-sixteenth of a grain of bichloride of mercury twice a day, during about two months. At the expiration of three months the patient had lost all pain and tenderness, and had regained the use of the arm, neither did pressure nor rotation of the head induce pain. The fulness in the neck had also disappeared.

I might here refer to what I have already alluded to, when speaking of inflammatory effusions, and endeavouring to show that the effusion of lymph, associated with local disease, really acts as a splint to secure local rest to diseased parts, and so aids recovery. In the case now under consideration this is the interpretation of the fulness of the neck during the persistence of the disease, and its disappearance when the original disease was removed. So it is with disease of the larger joints of the body when a cure is effected with or without anchylosis: all the surrounding lymph that has been poured out for a great length of time, and seemed to promise to be very enduring, entirely disappears. Its object was to act as a temporary splint, and to keep the parts quiet; that duty having been performed, the splint of lymph is no longer required, and it is absorbed, just like the temporary effusion, or callus, in the case of fracture. To conclude the case before us: this lady left town, and afterwards reported herself as quite well.

I may here add that this patient was accompanied by a lady who was very anxious to know whether her friend would get well. There was an intensity in her anxiety which I could not explain; for she really shook with fear, apparently, when she looked forward to the possibility of death occurring to the patient. The real cause of the patient's symptoms, and of this anxiety, was afterwards explained to me. The original cause of the disease in the neck was a blow playfully given by this other lady with a bolster or cushion upon the left side of the head of the patient, which forcibly displaced it laterally. These two ladies had been reading with each other something about the intestine wars of the houses of York and Lancaster. One seized a red and the other a white rose, and they had a battle of the bolsters instead of the battle of the roses. My patient (the white rose) was struck down, and so York fell—upon the carpet, and was unconscious for some little time. She had, as reported to herself, a sort of struggling fit. On recovery she was put to bed, and in a day or two nothing remained of the accident except some tenderness in the upper part of the neck; but soon afterwards the symptoms already indicated came on.

This patient had been under treatment nine months, getting worse the whole time, and I experienced great difficulty at first in persuading her as to the necessity or advantage of her lying down; but having felt considerable relief to all her painful symptoms in about a fortnight, there was then no further opposition to the adoption of rest to the spine and head by lying down. This patient was certainly perfectly cured, and *rest*, so far as I could interpret it, was the sole important element employed to aid and secure her recovery.

The next case is that of a surgeon, who was in the yacht of another gentleman. Running along from one part of the ship to another (I do not attempt to mention the names of the parts, lest I should make some very ridiculous mistake), he struck his head against the top of the door, and was thrown backwards with great force. Very shortly afterwards he had pain in the distribution of the occipital nerves at the back part of the head and the back of the neck (*vide* Fig. 11, *a' b'*). Six weeks from that time (he still continued in the yacht), having experienced some increasing pain, and heard and felt a grating sensation in his neck, he was somewhat alarmed, and came to me, suffering from pains indicating disease of the second or third cervical vertebra. He was ultimately cured by lying down,—that is, by rest. On the 8th of February last he came to me perfectly well, and he says he was quite cured by *rest*. Time will not permit me to dwell upon the details of this surgeon's case, although I have his permission to use his own notes of his symptoms.

The anatomical diagrams before you were all taken from dissections made by myself many years ago, and I merely refer to them to point out the relation of the occipital bone, the atlas, and the vertebræ dentata, and the various ligaments associated with the upper cervical vertebræ. These are the strong means employed by nature to support the head and neck, and at the same time to permit flexion, extension, and rotation of the head.

Disease of the Spine, Pain at the back of the Head, with Loss of Power and Sensation in the Limbs.

On the 28th of February, 1858, I was requested to see Mrs. S——, aged forty-five. I found her sitting in a large high-backed arm-chair, supported by pillows, with her head resting upon the side of the chair, unable to rise from her seat. I ascertained the following facts from her husband, and partly from herself. Her voice was very feeble, and her breath extremely short. During several months back, she had been suffering from pains in both arms and weakness of both legs, accompanied by pains in the neck and shoulders. She had been under medical treatment during the whole time, and had consulted a physician and an hospital surgeon. Both, according to the patient's report, considered the case as one of rheumatism or neuralgia, and ordered her to take walking exercise daily: one of them said two hours daily; the other, as much as possible. Iodide of potassium, colchicum, and opium, to relieve the pains, had been freely administered. Her pains were really terrific (that was her own description) in the arms at night, generally commencing about twelve, and continuing until four in the morning, when she usually dropped off into a short sleep. The dropping off to sleep at any time induced jumpings and startings of the limbs. This is a pretty constant concomitant symptom when the central portion of the spinal marrow is involved in the mischief, that being the very seat of the excito-motory function, as regards the spinal marrow. All her sufferings were increasing in severity and in danger up to the day I saw her sitting in the chair, when she presented the following symptoms: Loss of sensation in both arms, so that the prick of a pin was not felt (this I examined carefully myself). Both arms were nearly paralysed. She could move the fingers slightly, but could not lift either hand or arm, and was obliged to be fed by her daughter; this condition had been coming on nearly four months. In both legs sensation was much diminished, and they were imperfectly paralysed. She could neither walk nor stand, and was therefore carried from place to place. Both the upper and lower extremities were swollen from congestion of veins, but not œdematous; this seemed to depend upon the difficulty experienced in her respiration, which interfered with the transmission of the blood from the right to the left side of the heart, and so caused venous congestion in the veins tributary to the venæ cavæ. This, I believe, explained the accumulation of blood observable in the arms and legs and on the surface of the face, for the latter was swollen and the veins full. The voice had become gradually more and more feeble, and deglutition was difficult—indeed, sometimes so difficult that she was afraid of being choked. She could not move her tongue freely, nor protrude it; hence her articulation was very imperfect. (I think we may fairly infer from the difficult movements of the tongue, that the lingual nerve, which is attached to the lower parts of the medulla oblongata, must have been implicated in the mischief.) There was no paralysis of the face, no loss of power, no pain, no loss of sensation in the distribution of the fifth nerve. The movements of the eyes were normal. There was exquisite pain and some tenderness at the back of the head, extending to the vertex on both sides of the median line posteriorly (*vide* Fig. 11, *a'*). (This, you see, marks pretty accurately the distribution of the great occipital nerves; therefore, if any pain be expressed in that neighbourhood, it must be referred to the great occipital nerves.) There were pains at the back of both ears (within the distribution of the small occipital nerve), but more especially upon the right ear (*vide* Fig. 11, *b'*). There was no pain in front of the ears, or in the auditory canals. (This is in accordance with the fifth nerve being free from implication.) The head was inclined to fall forwards, and, indeed, she found it impossible to keep it up without artificial support of some kind. On pressing the head directly downwards upon the spine, and attempting to rotate the head upon the spine, she could not bear it. She became nearly pulseless and fainted, and the limbs tremulous and agitated. We immediately placed her upon the floor of the room. I thought she was dead, but she very slowly recovered. The neck, from immediately below the occiput to opposite the first, second, and third cervical vertebræ, was a little swollen and painful on direct pressure. Bowels very much constipated; micturition very difficult and tedious, the urine of a strong, pungent, ammoniacal odour. The patient could not recollect any mischief having occurred to the neck; but in trying to take any weighty things from high shelves, she remembered she had frequently experienced pain in the neck and head during such efforts. I will not detain you with the full details of the case. It is a very important one, not only in regard to its actual character, but as having been overlooked by the physician and surgeon who were consulted.

Believing the disease in this case to be seated about the first and second cervical vertebræ, that all the symptoms were ex-

plicable upon such a supposition, and that the only possible remedy was absolute and long-continued rest to the spine, I directed her to be placed in bed immediately, flat upon her back; and I did not leave the house until it was done. A small, firm pillow was put under the neck, and, in the evening of the same day, two large, half-filled bags of sand were placed, one on each side of the head and neck, to prevent any lateral movement of the head. She was not to be disturbed from the horizontal position for any purpose whatever; the bowels were to be relieved by enemata, and the urine to be drawn off if necessary. (The exact and methodical arrangement of a patient suffering from disease of the upper cervical vertebræ is a matter of great importance, and I have placed before you a drawing of a vertical and nearly median section of the head, brain, spine, and spinal marrow, for the purpose of enabling me to explain and illustrate the necessity of placing the patient in a properly-sustained position in bed. The drawing is copied from a recent dissection made for this object.)

FIG. 14.

Longitudinal section of a head, spine, &c., on right side of the median line. The body recumbent. Those parts of the drawing only are lettered which have reference to the cases of diseased spine which are described in the lecture. *a*, Pons Varolii. *b*, Medulla oblongata. *c*, Spinal marrow, terminating opposite the space between the first and second lumbar vertebræ. *d*, Base of skull formed by occipital and sphenoid bones. *e*, Atlas, or first cervical vertebra. *f*, Axis, or second cervical vertebra, with its ascending or odontoid process interposed between the atlas and the medulla oblongata. *m*, Thin pillow placed under occiput. *n*, Thicker pillow, supporting the hollow of the neck, so as to prevent the second vertebra falling backwards upon the medulla oblongata. *o*, Six lumbar vertebræ, as found in the body dissected. *p*, Sacrum.

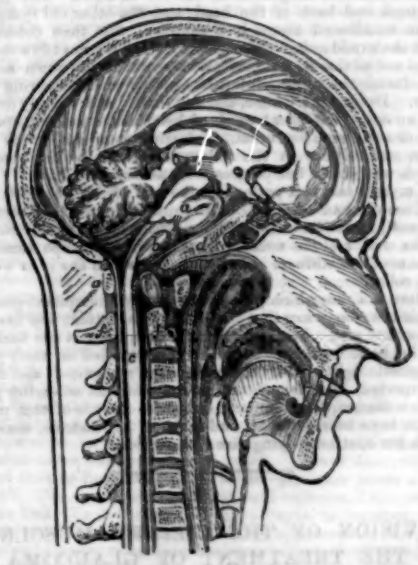
The patient was placed with her back flat on her bed. This position brought on extreme difficulty in her breathing. Whilst she was still in the recumbent position, and breathing with difficulty, I placed my hand underneath the neck, and lifted upwards and forwards that part of the spine. The sense of suffocation became at once much diminished, (I had observed the same circumstance before, in another patient who had disease of the highest part of the spine,) and I had therefore a small firm pillow put underneath the neck, which supported it very perfectly. This is a very important fact, because I think I have known at least two persons who were destroyed in consequence of this little point not having been attended to.

If the ligaments between the first and second vertebræ and the occipital bone be destroyed, and you have nothing to support the great posterior concave or hollow of the neck, this part of the spine gravitates; the odontoid process sinks or falls, and presses upon the lower part of the medulla oblongata. (See Figs. 14 and 15.) By putting something (say a small firm pillow) underneath the neck, we lift up the body of the second vertebra, and remove the odontoid process from the lower part of the medulla oblongata, and thus prevent the fatal result of pressure upon it.

I have here another sketch, taken from the same dissection as Fig. 14; but in this instance the ligaments between the second vertebra, the atlas, and the occipital bone have been purposely divided, and I believe it fairly represents the condition of the parts which caused the death of one of the patients to whose case I shall presently allude. In the sketch before you all the before-mentioned ligaments have been cut away; if a dead body, thus prepared, be placed in the *recumbent position*, without mechanical support to the hollow of the neck, the second vertebra, with its odontoid process, falls towards the medulla oblongata, and makes pressure upon it; or if a dead body, so prepared, be placed in the sitting or erect posture, the head has an immediate tendency to fall forwards, and to impale the medulla oblongata upon the odontoid process, which, as you may see, strikes exactly upon the point of decussation of the spinal marrow, with the fibres of the medulla oblongata. This is the mortal part of the cerebro-spinal axis, as superintending the respiratory process; and so it happens that patients thus circumstanced are killed immediately.

In the patient's case, to the details of which I have been directing your attention, a small pillow was placed under the cervical portion of the spine, by which we were enabled to lift up the odontoid process away from the medulla oblongata, and maintain the latter in a state of comparative security from pressure. I repeat, that when this patient was lying flat upon the bed, she could scarcely breathe, but as soon as I put my hand behind the neck and lifted up the odontoid process, she was nearly free from dyspnœa. It was obvious that her condition necessitated her lying down upon her back for some considerable time.

FIG. 15.



Sketch of a dissection, showing the head falling forwards, as happens in some cases of destruction of the ligaments, associated with disease of the joints between the atlas and axis and occipital bones. The head and atlas inclining forwards, and leaving the second vertebra in its proper position, crush the medulla oblongata upon the odontoid process of the second vertebra, and so causes sudden or instant death. *a*, Pons Varolii. *b*, Medulla oblongata. *c*, Spinal marrow. *d*, Base of skull, formed by occipital and sphenoid bones. *e*, Atlas, or first cervical vertebra. *f*, Axis, or second cervical vertebra, with its ascending odontoid process. These bones are here shown widely separated, as the result of the division of the ligaments between them.

(And here I am reminded of a contrivance adopted by a patient of mine living in the country, and suffering from disease

of the spine, which compelled him to be on his back during many months. He ultimately got well, and is now fully occupied in business. The ceiling of his capacious and comfortable room was, as usual, white. I had occasion to see him in a few weeks after his first lying down, and on entering his room I was surprised to observe the ceiling covered with green gauze. I asked what was the matter, and he said, "The fact is, lying on my back, and looking at the white ceiling all day long, became so distressing and irksome to my eyes and brain, that I could not bear it any longer. I knew, from experience, that I could look upon a green field all day long without tiring, and therefore I have had the ceiling covered with green gauze, and since then I have had no difficulty at all." That was a slight practical hint that I thought worth mentioning here.)

This patient was ordered one-sixteenth of a grain of bichloride of mercury, and one drachm of tincture of bark, to be taken twice or thrice daily in a wineglassful of water, and sufficient laudanum, when required, to procure sleep. At the expiration of a month she had regained her voice and her power of articulation and deglutition; her pains were lessened, she could sleep more, and all the other symptoms, with her general health, were slightly improved, but not much so. She had found the sand-bags very comfortable; their lateral support to the head and neck appeared to give her confidence, especially in going to sleep. She remained lying down, and in the same position, uninterruptedly, almost without stirring, during seventeen weeks. At the expiration of that time, all her symptoms were so much relieved, that it was thought safe to allow her to be raised a little in bed, more and more, but by slow degrees, every two or three days, for about ten minutes, with the head supported. About two months afterwards, she was permitted to sit for a short time in a chair, but still with the head supported. She had now regained her power over her limbs, was nearly free from numbness, and had little or no pain on moving the head. Walking exercise was therefore allowed to be carefully and gradually increased. After some little time, gaining strength and confidence in herself, she extended her walk into her garden, and remained in it until she became so fatigued and exhausted that she lost all muscular power, and was obliged to be carried in-doors. The pain in the neck and back of the head, and the other old symptoms, again manifested themselves slightly. She then determined that she would not go out of doors during the next five months. I did not advise it, but she said she would lie down more or less during the whole winter, and get up with the spring of the year. During the winter, she was loosely and warmly dressed, got up daily, but spent most of her time recumbent upon the bed or sofa, with her quiet, comforting companions, the sand-bags, and relying on the influence of rest for her recovery, which was slowly but progressively accomplished.

I myself saw this patient on the 2nd of March, 1860. She told me she had been well during many months, and occupied, as usual, in her household duties. She rides in omnibuses and walks well, and has nothing to complain of except some little weakness and stiffness in her neck, for which she is to wear an iron collar.

Here is a case which puts *rest* in a very triumphant position. I think we may say that the life of this patient was saved by opportune rest. Her early painful symptoms at the back part of the head were not appreciated or regarded in their proper diagnostic light. Had these pains been recognised, and rightly interpreted, by those whom she consulted at an earlier period of her disease, the imminent danger to the life of this patient might have been averted, and much of her distress, associated with her continued lying down, superseded.

ON THE

DIVISION OF THE CILIARY MUSCLE IN THE TREATMENT OF GLAUCOMA, AS COMPARED WITH IRIDECTOMY.

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(*Concluded from page 338.*)

CASE 6.—*Chronic Glaucoma.*—T. L——, aged sixty-eight, admitted on the 29th of February, 1860. Was formerly a steward on board a steam-packet; temperate; of good health until three years ago, when he became subject to pains in the right side of his head. He suddenly lost the use of the left side of his body, and became totally blind. He gradually recovered the use of his side, and in six months he partially regained his sight, but not the power of reading. During the last eighteen months his sight has been gradually getting worse, with pain in the eyes, flashes of light and bright colours; he is still subject to headache.

On admission, both eyeballs were hard and prominent, with the pupils dilated. The irides were bulging forwards and insensible to light. Cornea transparent, and the lenses opaque and of a greenish hue. He can distinguish light from darkness, and is aware when the hand is passed before his eyes, but cannot distinguish fingers.

March 2nd.—Mr. Hancock divided the ciliary muscles in both eyes.

17th.—Somewhat better, but cannot discern objects.

Sept. 7th (six months after the operation).—Patient can now discern small objects, such as a key, pencil-case, or the hands of a watch. He can distinguish people's countenances and different colours.

CASE 7.—*Glaucoma.*—J. B——, aged forty-one, admitted May 9th, 1860, under the care of Mr. Hogg. He is a cab-driver, and has been accustomed to ardent spirits, but has abstained from them of late. States that four years ago a black cloud appeared by the side of the left eye, which some months afterwards became misty, as though (to use his own words) a skin was growing over the front of the eye, occasionally accompanied by pain round the orbit and flashes of fire. For the last twelve months he has suffered from severe headache and deafness. The sight of the right eye began to be affected two years ago with dimness and pain round the orbit.

On admission, his eyeballs were very prominent, and felt to the patient as though they would start out of his head. The sight of his right eye just enabled him to discern the number of fingers held up to him at various distances. The sight of the left was very inferior to that of the other. He could not distinguish anybody.

May 11th.—Mr. Hogg divided the ciliary muscle.

15th.—The sight is slightly improved, and the pain round the orbit is easier.

22nd.—To attend as an out-patient.

Aug. 15th.—Can see pretty well with the right eye, but says the sight of the left eye is not quite so good as that of the right.

Sept. 17th (four months after the operation).—He is now able to read the large type on his hospital letter with both eyes; is daily improving, and can go about without assistance. Told the time by Mr. Hogg's watch, and said he felt that both eyes were improving daily.

CASE 8.—W. S——, a gardener, aged forty-two, admitted under the care of Mr. Power, April 7th, 1860. Eight years ago he noticed a black spot in the field of vision of the left eye, which continually increased in size until it occupied the whole field. He has occasionally had severe pain in the eyes, and a sensation of fulness; and has sometimes, though seldom, had flashes of fire. Since September, the right eye has become dim, and he often sees a black spot before it.

On admission, the left eyeball is hard, and the surface of the cornea somewhat rough; the aqueous humour is turbid; the lens completely opaque; the iris convex, with its pupillary margin adherent to the anterior surface of the capsule of the lens; whilst the cornea is prominent, and surrounded by a zone of blood-vessels. He has perception of light with the eye, but cannot discern objects. The sight of the right eye is dim, but he can read ordinary print; there is great myopia; the pupil is somewhat dilated and sluggish, and there is some opacity of the lens.

April 13th.—Mr. Power divided the ciliary muscle of the left eye. A considerable quantity of fluid escaped.

16th.—The wound has healed, and the eyeball is less tense. The patient has had no pain.

27th.—Mr. Power depressed the lens in the left eye.

May 1st.—Allowed to get up. States that the sight is very much improved, and that he can see as well as with the right eye.

7th.—Still going on well. Discharged.

CASE 9.—*Glaucoma.*—H. W——, aged forty-six, admitted, under the care of Mr. Bowman, on the 4th of May, 1860. For eleven years has suffered from attacks of pain, with dimness in the left eye. Within the last week, the pain has become so intense that she cannot procure sleep. Complains of intense throbbing pain in the left eyeball, circumorbital pain, and flashes of light; cannot distinguish any object. The cornea is

slightly ulcerated; anterior chamber much flattened, with the iris pushed forwards; pupil large and immovable; the conjunctival and choroidal veins large; pressure on the eyeball caused great pain. Mr. Rouse divided the ciliary muscle. A considerable amount of fluid escaped.

May 5th.—Within an hour of the operation the pain was relieved, and she passed a good night.

18th.—Has had no pain since the operation; can now see the time on a watch; the eye has nearly regained its natural appearance.

28th.—Still free from pain, and sees perfectly. To attend as an out-patient.

June 15th.—She came to show herself, stating she was quite well.

CASE 10.—E. C——, aged fifty, admitted July 11th, 1860, under the care of Mr. Hancock, with glaucoma of left eye. A year ago found the eye attacked with dimness, and now he can scarcely distinguish objects. Has observed muscæ before the eye, the pupil of which is dilated, the iris bulging forwards.

July 15th.—Mr. Hancock divided the ciliary muscle.

30th.—Sees much better; can now distinguish a person's features, and see objects the other side of the street.

Sept. 19th (two months after the operation).—Sight much improved; can now read small type, *The Times* newspaper for instance, easily.

CASE 11.—*Glaucoma.*—A. S——, aged seventy-five, was sent to me by my friend Mr. Powell, of John-street, Berkeley-square, on the 30th July, 1860. When admitted obliged to be led up-stairs, as she was quite unable to see her way about. The conjunctiva and sclerotica of right eye were both injected, with the zone of vessels around the cornea; the lens was hazy and greenish in colour; the cornea dull, and appeared as if covered by superficial ulceration; globe of eye very tense; arcus senilis well marked. She complained of great pain in the eye. States that she lost the sight of the left eye three years ago; but the sight of the right eye was perfect until three months since, when it became dim. At times she required to be led about, at others she could see better. When admitted she could just distinguish light from darkness; but she said that on that very morning she had been unable to discern a piece of lighted paper.

July 30th.—Mr. Hancock divided the ciliary muscle of right eye.

Aug. 1st.—No pain; much less vascularity; cornea clearer.

2nd.—Says she can see plainly; cornea clear; no pain.

3rd.—Is able to read with ease; says her sight is perfect; cornea clear, and sclerotica quite free from congestion. Discharged.

Oct. 17th.—She is now able to read the paper by the hour together, without difficulty or pain, and can thread a needle.

CASE 12.—J. B——, aged fifty-two, admitted August 17th, under the care of Mr. Hogg, with subacute glaucoma. Can just see light with the left eye, which was congested, with the zone of vessels around the cornea. He suffers great pain in the temple. The iris bulges forwards, and is insensible to light; pupil dilated, irregular, hazy, and of a greenish hue; lens slightly hazy. The sight has been failing for some time, but only lost to the present extent for three weeks.

Aug. 17th.—Mr. Hogg divided the ciliary muscle.

19th.—Can see better; the eye looks clearer.

Sept. 10th.—Can now see plainly, and discern people on the other side of the road. His sight is much improved, and continues to improve, he says, daily.

CASE 13.—*Glaucoma.*—A. H——, aged forty-seven; admitted May 18th, 1860, under the care of Mr. Rouse. Four years ago her sight began to fail, so that she was unable to thread a needle without glasses. One day last September she was attacked with violent pain in both her eyes and round the orbits, especially the left. The following day, the pain increased so much in intensity that she was compelled to keep her bed. The sight of the left eye became seriously affected, vision being very limited and indistinct. The right eye was affected, but not to the same extent. In December she first applied at the hospital, at which time the sight of the left eye was completely lost. The pupil was large and irregular, the vitreous humour being too opaque to admit of ophthalmoscopic examination. The pain in the left eye and side of the head was so intense that she could get no sleep. Under these circumstances the ciliary muscle was divided. The operation completely relieved the pain, but there was no return of vision. The right eye improved very much after the left was operated upon; in fact, she was so much better that she ceased to attend.

May 16th.—Her right eye has become so much worse that she can no longer read. She can discern large objects, but not sufficiently to recognise a face. The pupil is large and irregular, and the iris bulges forwards; cornea flattened; vitreous humour semi-opaque.

18th.—Mr. Rouse divided the ciliary muscle.

30th.—Has progressed favourably; is able to read for a short time without inconvenience. To attend as an out-patient.

Aug. 13th (three months after the operation).—Her sight in this (the right) eye is perfectly good. The left eye, which was operated upon (apparently without benefit, except in relieving pain) in December last, or nine months ago, has lately improved; she can now perceive the window-frames.

CASE 14.—*Glaucoma.*—L. N——, aged thirty, single, dressmaker, admitted, under the care of Mr. Rouse, on the 8th of June, 1860. Two years ago her sight began to fail. She had pain from time to time in her temples and forehead, the sight gradually getting worse. A year ago her symptoms were so much increased that she could no longer see anything distinctly. She could only read large print and do coarse work, but this very indifferently.

On admission, the pupils were large and fixed, eyes hard, cornea flattened. Ophthalmoscopic examination showed dilated veins in both retinæ; optic discs slightly cupped; she could not tell the back of a watch from its front.

June 8th.—Mr. Rouse divided the ciliary muscle in both eyes.

18th.—Has had no pain since the operation. The irides have assumed their natural size, and act perfectly. This morning she threaded a needle, and read ordinary-sized print; says she has not seen so well since the first attack, two years ago.

Aug. 13th.—Her sight still continues satisfactory.

CASE 15. [This case is drawn up by my friend, Mr. Whitney, of Great College-street, Westminster, who attended the patient with me.]—Miss H. F——, twenty-six years of age. The left eye became affected six years ago with acute iritis. Under a mercurial treatment the inflammation subsided, but in three or four months, after exposure to cold, relapsed. This second attack was treated with mild mercurials combined or alternated with a variety of tonics, accompanied with constant appliances of counter-irritation. This course of treatment, which extended over a period of three years, exercised little control over the steady, obstinate progress of disease, evinced by perpetual chronic sclerotitis, contracted and irregular pupil, with progressive opacity of the lens and its capsule, and opacity of the circumference of the cornea. These conditions were accompanied by gradual loss, and ultimately utter extinction, of vision in the left eye. Subsequently, two or three very small spots of deposit were observed in the iris of the right eye. An issue was now made in the right arm, and the little spots in the iris soon disappeared. This eye continued in a sound state for two years. Three months ago (May, 1860) the patient experienced suddenly (after some exposure to cold) a sense of dimness and weakness of sight. The issue, which, in consequence of much debility, had been gradually permitted to heal, was immediately re-opened, but without effect. The sclerotica soon presented a slight zone of redness, which quickly became a bright circle of inflammation around the cornea. The pupil became enlarged, irregular, and appeared notched on its inner margin with a white fibrinous deposit at this point. The lens appeared cloudy. Vision was now rapidly failing; nothing could be clearly seen; the power of defining objects was gone.

Mr. Hancock having seen the eye, decided on performing his operation for dividing the ciliary muscle. He therefore operated seven weeks ago (June, 1860). It was distinctly observed that *no* fluid escaped from the puncture made in the eyeball. The eye was dressed with cold water, and the patient put to bed. In ten days the sight began to improve, with gradual subsidence of the inflammatory appearances; the pupil to recover its shape; and the fibrinous-looking deposit is daily diminishing. She can now (August, 1860) define small print distinctly.

Sept. 5th.—I saw this young lady to-day. She still continues to improve.

I here subjoin—

CASE 16, kindly furnished to me by Mr. Canton. It strongly corroborates the opinion which I have here maintained, that the relief afforded by these operations is due to the division of the ciliary muscle, and not to the evacuation of fluid:—

M. A. T——, aged eighteen, admitted into Charing-cross Hospital, under the care of Mr. Canton. Had been frequently under Mr. Canton's care during the last seven years for attack of strumous corneitis. Within the last two years the sight of

the right eye has been gradually getting worse; and for the last ten months she has been totally deprived of sight. On admission, the following appearances were present:—Staphyloma of the sclerotica at its upper surface, extending closely to the cornea; large and tortuous superficial vessels; great tension of the eyeball; sclerotica very blue; lens slightly hazy. She has no pain, but could not distinguish light from darkness. Three weeks after admission, Mr. Canton punctured the sclerotic, and evacuated some vitreous humour; but, at the end of a month, she was in no way improved. He now divided the ciliary muscle, as recommended by Mr. Hancock. Little, if any, fluid escaped; but since this time (now seven weeks), the perception of light has been restored, and the patient can now perceive the shadow of a hand passed before the eye.

Harley-street, 1860.

ON A

NEW METHOD FOR THE REDUCTION OF STRANGULATED HERNIA.

BY WALTER JESSOP, ESQ., M.R.C.S.,
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IN May last I was called to a case of strangulated hernia (left oblique inguinal), in a man aged fifty-two years. The accident had occurred some thirty-six hours previously. The taxis, opium, chloroform, hot baths—in short, all the ordinary modes of treatment, had been perseveringly applied without success.

At the time of my visit I found my patient in a partial state of collapse, in a profuse cold perspiration, with great tension of the abdomen, and symptoms of hiccough and nausea coming on. He complained bitterly on my lightly attempting an examination; indeed, the part seemed so exquisitely painful as at once to negative all hope of success from further direct efforts at reduction. An immediate operation was proposed, but firmly declined by the patient and his friends. Desiring them to seek further advice, I left the room, but was immediately recalled, with a request that I would permit of an hour's delay. Agreeing to this, and while waiting in the house, a thought struck me that it might occasionally be possible to relieve a patient under such circumstances without having recourse to the knife. On explaining this to the patient and his friends, they at once consented to a trial of the means proposed.

Calling a male attendant into the room, I directed my patient, still lying on his back, to the edge of the bed, and, with assistance, separated his legs, placing one over each shoulder of the attendant, who, facing the bed, stooped to receive them; and, in this position, by passing his hands round the fore part of the thighs, was enabled to obtain a sufficient purchase to permit of his raising him on to his head and shoulders on the bed, thus throwing the intestines back upon the diaphragm, and to some extent necessarily making traction behind and directly *from* the seat of strangulation. After two or three minutes' manipulation of the abdominal parietes, I found the tumour become less tense, and drawing forwards the integuments round the point of rupture, I made lateral, upward, and downward movements—jerking, as it were, occasionally the parts immediately contiguous to the stricture. This seemed to excite but little suffering; in fact, the patient, so far from uttering complaint, declared himself, after the first two or three minutes, decidedly relieved—that "the dead sickening weight that killed his groin," as he termed it, was better. Continuing these efforts, and varying them as they seemed to occasion distress, I presently felt a slight gurgling under my hand, and almost immediately had the satisfaction of finding the hernia reduced, and my patient comparatively in a state of safety.

The whole proceeding certainly did not occupy ten minutes. Slight peritoneal tenderness existed for some days, but the man eventually did well.

The *rationale* of the proposed plan is simple. A mass, large or small, of displaced intestine or omentum must assuredly be more readily withdrawn from its point of incarceration or strangulation by traction from behind than by the best-directed efforts of the taxis. Anyone, for illustration, taking the trouble to put a fold or two of his handkerchief in a ring formed by his finger and thumb, and lightly strangulating it, will, on attempting to return it by pushing or kneading from before backwards, find infinitely greater difficulty in effecting his purpose than if he were to make traction from behind. In short, the employment of the taxis is at the best a clumsy and most uncertain mode of proceeding, and I shall venture in future to make it merely supplementary to the plan I now advocate.

"One swallow fails to make a summer," and it may be said that the practice of turning patients *à posteriori* upwards is opposed to all orthodox notions of propriety. Admit all this. Others, with greater opportunities, may happily be enabled to add to my single case; and granting that the position of the patient may be accused of positive inelegance, it may, at any rate, contrast favourably with our proceedings in lithotomy and in many other operations on the perineal region.

Royal-crescent, Cheltenham, Oct. 1860.

A Mirror

OF THE PRACTICE OF

MEDICINE AND SURGERY

IN THE

HOSPITALS OF LONDON.

Nulla est alia pro certo noscendi via, nisi quam plurimas et morborum et dissectionum historias, tam aliorum proprias, collectas habere et inter se comparare.—MORGAGNI. *De Sed. et Caus. Morb.*, lib. 14. Proœmium.

GUY'S HOSPITAL.

CHRONIC DYSENTERY, AFFECTING CHIEFLY THE TRANSVERSE COLON AND RECTUM; RELIEVED BY TREATMENT.

(Under the care of the late Dr. ADDISON.)

DYSENTERY, in all its forms, has been frequently brought under notice in the pages of THE LANCET by practitioners who have had much experience of its treatment in various latitudes. The acute form is to be seen in this country only as isolated examples here and there. The subacute and chronic kinds, on the other hand, form a large proportion of the cases that come under treatment in hospital practice, and chiefly in persons who have originally contracted the disease in foreign climates. Three of the four examples which we now record were of this character. We have taken them as they occurred, without making any special selection beyond the fact that they were illustrations of the disease. Of the four cases, three were young men; and the fourth was a man affected at the unusual age of seventy-seven years.

The treatment of the acute form of dysentery by large doses of ipecacuan, was brought before the profession in this journal (vol. ii. 1858, pp. 113 and 169) by Mr. Docker, who believes that by the use of this drug, this hitherto intractable disease may be as much under control, and as expeditiously cured, as simple diarrhœa. The evidence he brings forward in proof of this, is of much value. We have not witnessed its employment in any of our London cases, but that it is well worthy of trial, the loss of but one patient, out of upwards of fifty in which it was used, would seem to prove. This single fatal case was complicated with abscess of the liver.

Our space will not permit us to go into the question of treatment; but we would refer to the "Clinical Illustrations of Disease of the Abdominal Viscera—Dysentery," in a previous volume of this journal, by Dr. Ward, one of the physicians of the *Dreadnought* Hospital, for much practical information on this part of the subject, more particularly in relation to the disease as encountered in England. This physician remarks, that "it is essential for the practitioner not to be enamoured of, nor obstinately persevere in, any special remedy. Remedies, which when first exhibited produce most satisfactory results, quite lose their efficacy after they have been administered for a few days, or a week or two." His experience agrees with that of many others, in that most benefit is to be expected from a change of remedies. This, of course, applies to the chronic form, which is more frequently to be met with in the *Dreadnought* Hospital than in any other institution of the metropolis. As of especial interest at the present time, from the publication in our pages of Mr. Hilton's interesting and important

course of lectures "On Pain, and the Therapeutic Influence of Mechanical and Physiological *Rest* in Accidents and Surgical Diseases," we find Dr. Ward stating that "in the treatment of subacute, and also of chronic, dysentery, the first thing to be insisted upon is *rest;* a position—the recumbent—in which the bowels are best supported and kept quiet." He has found patients who had previously been travelling or moving about at once relieved by rest, their stools diminishing in frequency even before any medicine was given. This fact is commonly witnessed in hospital practice. Sometimes the general symptoms yield very speedily, and the patient leaves the hospital after a short period of treatment. The prudence of this practice is questionable, because there is a strong liability to recurrence. In none of the patients whose cases are now given were there any symptoms having special reference to the liver, except, perhaps, the jaundice in the one under the care of Dr. Parkes.

The notes of the following case were taken by Mr. Richard Davy, clinical clerk.

James W——, aged twenty-six, sailor; ill two years. General health good; habits intemperate; had syphilis in 1849. He had been engaged at Hong Kong in the merchant service for nearly two years, during which time he lived much on salt provisions and impure water. In the commencement of 1858 he was first attacked with dysentery, which appears to have been severe. He was attended by a naval surgeon, and his symptoms were alleviated. He has ever since been subject to passing slime, a constant desire to go to stool, with occasional tenesmus. He never had vomiting or dysuria. He is a dark, well-formed, swarthy man; skin much bronzed from exposure, with the elevation of temperature; chest resonant, and the thoracic viscera appear to be healthy; pulse 72; respirations 34; abdomen is of average size, and resonant, and there is slight diffused tenderness. He refers the greater amount of pain to the transverse colon, associated with frequent strainings and tenesmus. At times he feels unpleasantly the pulsation of the abdominal aorta. His stools lately have not contained any blood; they are offensive, and on examination present two different appearances—first, small knotted, feculent matter; secondly, a thick slime, deeply tinged with bile. The microscope shows large shreds of columnar epithelium, nucleated, mucous corpuscles in a state of disintegration; no blood-discs. Urine of high colour, and specific gravity 1030; no albumen; appetite very good; mouth dry and tongue white; papillæ are enlarged and elevated.

Oct. 5th.—Castor oil and tincture of rhubarb, of each two drachms, in an ounce of cinnamon water, at once; diet of milk, beef-tea, and arrowroot.

6th.—Had four successive loose stools.

7th.—Three loose stools in quick succession. Dr. Addison thought that the rectum was implicated, and pus present in the evacuations. To have three grains of Dover's powder night and morning; linseed poultice to the abdomen.

8th.—He is continually in a state of suspense, the desire to go to stool coming on instantly, necessitating his instant obedience, though perhaps the amount passed may be but little, and consist merely of mucus. He was relieved by the poultice. Had two loose stools to-day.

10th.—The straining is considerably relieved; motions of the same character as before. Ordered port wine, four ounces; middle diet, but no porter.

11th.—This day he passed some quantity of mucus, pus, and blood, with very little fæcal matter. Dr. Addison ordered him to repeat the mixture as on October 5th.

12th.—The medicine to be repeated to-morrow morning.

14th.—His motions are almost natural, though slime and blood are occasionally present. His tenesmus and training are very much better, though he still complains much of the suddenness with which the desire to go to stool comes upon him.

15th.—He conducted himself disorderly, and was therefore discharged this morning. He had, however, much improved by his stay in the hospital.

CHRONIC DYSENTERY, CONTRACTED IN EARLY LIFE, IN A MAN AGED SEVENTY-SEVEN, NOW AFFECTING THE SIGMOID FLEXURE OF THE COLON AND THE RECTUM; RELIEF.

(Under the care of Dr. OWEN REES.)

The remarkable feature in the present instance is the ripe old age attained by the patient, who had been subject to attacks of dysentery at intervals since its contraction in early life. We avail ourselves of the notes taken by Mr. J. Q. Couch, one of the hospital pupils.

William P——, aged seventy-seven, a leather-dresser, admitted into Stephen ward on the 3rd July last, under the care of Dr. Rees. On admission, his aspect was rather emaciated and feeble, but not much more so than might have been expected from his age. Temperament phlegmatic; eyes rather dull, and with arcus senilis. In early life, after serving an apprenticeship of six years to his trade, he entered the Navy, and followed this calling for six years during the exciting period of the war with the first Napoleon. Whilst so engaged, and when at Penang in the East Indies, he became affected with a severe attack of dysentery, in common with many of the crew, several of whom died. The disease so taken has troubled him at intervals ever since, with varying severity, but never preventing him following his usual employment. He has been an inmate of Guy's on four separate occasions, but each time for an accident, and never for the complaint of which he is now ill. The present attack commenced about three months since, when he was seized with vomiting and purging, at first slightly, but which has since steadily increased. At first the stools contained no blood, and the evacuation from the bowels was never so troublesome as the sickness, which invariably came on immediately after taking food. Since the first few weeks of the attack the sickness has gradually diminished, and has now entirely ceased, but left a feeling of nausea; while the loose bloody discharge from the bowels has increased in the same ratio. He now complains of excessive pain in the lower part of the abdomen, particularly in the left iliac region, preceding each evacuation. It appears to have somewhat diminished in frequency for a week previous to admission. On manipulation the abdomen does not appear to be very tender. His appetite is bad, the nausea preventing his relishing food; tongue clean, although protruded feebly and with tremor; pulse 65, feeble, and very compressible; urine normal. The skin is dry and its temperature low. Intellect calm and collected. Heart feeble, but no organic disease present. He has a hydrocele on the left side.

July 5th.—Ordered a tepid poultice to the abdomen, and a grain of opium thrice a day.

7th.—Considerably relieved for the first two days; to-day, however, the symptoms are aggravated, and he now complains almost as much as on admission. In addition to pain in the abdomen, sickness has returned. Ordered compound conium mixture with three grains of the sesquicarbonate of ammonia thrice a day, and an opium pill at once.

9th.—Much relieved.

11th.—Much the same. To have a grain of opium thrice a day, four ounces of port wine, and an enema of castor oil.

21st.—Much freer from pain; no sickness for the last week; bowels have acted on an average four times daily during that time, and the evacuations are healthy.

He left the hospital shortly after this, much relieved, with a diminished number of motions per diem, and of a healthy character.

CHARING-CROSS HOSPITAL.

CHRONIC DYSENTERY IN A SAILOR, SUCCESSFULLY TREATED BY THE DECOCTION OF INDIAN BAEL.

(Under the care of Dr. WILLSHIRE.)

PARTICULAR remedies for the chronic form of dysentery are recommended by many practitioners. Mr. Ellis, of Bristol, declares the compound tincture of benzoin to be of great value in chronic cases (THE LANCET, vol. ii. 1856, p. 221). Subjoined is an example in which the use of decoction of bael, conjoined with bismuth and opium, was followed by cure. With regard to the Indian bael, we may observe, that its virtues in chronic dysentery and diarrhœa have already been spoken of by Sir Ranald Martin, Dr. Stephen H. Ward, and others, and it enjoys a high reputation in India for these complaints. It is the Crataeva, or Ægle marmelos of Linnæus, grows abundantly around Bengal and in other parts of India, and belongs to the natural family Aurantiaceæ. It contains tannin, mucilage, essential oil, an aromatic and a bitter principle. It possesses the important property, it is asserted (thus differing from most vegetable astringents), of not subsequently confining the bowels, but appears rather to strengthen and regulate their action. Of the various preparations of the bael, the decoction is the one commonly employed, and this is made from the dried fruit as imported into this country.

We are indebted to Mr. Holton Arnold, late clinical assistant, for the notes of the following case:—

K——, aged nineteen, a sailor, suffering from dysentery for

four months. He was first attacked in Calcutta during an epidemic. He suffered much pain in the bowels, with great bearing-down and tenesmus, and had thirteen or fourteen motions in the twenty-four hours. In coming home, several other men on board ship were attacked by the same disease. He used to pass blood and matter with the motions. He was living on junk and biscuits; and as the surgeon to the ship had died in Melbourne, there was no one to treat him, and no remedies were taken either in Calcutta or during the voyage home. He still continued to perform his duties on board ship, but felt he got gradually worse. On arriving in London, he commenced to eat fresh meat before applying for medical aid, and he improved slightly. He applied at this hospital four or five days after landing, and was admitted on the 27th of December, 1859. He was first treated with bismuth and opium three times a day, washed down by an ounce and a half of decoction of bael, and the recumbent posture ordered. A mustard plaster, and afterwards linseed poultices, were applied to the abdomen. All solid diet was prohibited, and he was confined to eggs and milk, with No. 2 diet. In a few days he had much improved; had only passed blood twice after his admission into the hospital; had lost the tenesmus; bowels moved once a day, and then once in two days. On the 4th of January, 1860, he was allowed to get up, and was put upon fish diet, since which he has been gradually improving. Discharged, well, a fortnight after admission.

UNIVERSITY COLLEGE HOSPITAL.

ACUTE DYSENTERY, WITH TYPHOID FEBRILE SYMPTOMS AND DELIRIUM; RECOVERY.

(Under the care of Dr. PARKES.)

THE patient who was the subject of this case, which we have called one of acute dysentery, was a cavalry soldier, with no previous history of the complaint. The prominent symptom, on his admission the second time, was the passage of a large quantity of blood in his motions, mixed with slime, and associated with abdominal pain. It seemed uncertain whether this was the result of dysentery. At any rate, there appeared to be no doubt that the source of the hæmorrhage was the large bowel, whatever the cause might be that gave rise to it. Added to his enteric symptoms, were some which strongly simulated typhoid fever, only that they disappeared somewhat speedily. Altogether the case is a curious one.

The last example of the idiopathic form of the complaint which was recorded in our "Mirror" (*vide* THE LANCET, vol. ii. 1859, p. 615), was that of a female in St. George's Hospital, under the care of Dr. Bence Jones. It ended fatally, and the amount of disease found after death was much greater than was anticipated from the mildness of the symptoms during life.

The following abstract we have condensed from the hospital case-books:—

Frank H——, aged twenty-five, a native of the West Indies, was admitted Oct. 3rd, 1859. Is a cavalry soldier; has been in the Crimea; has always had good health; was wounded in the neck by a shell fragment in the Crimea. About twelve months ago he fell down after free drinking, and remained forty hours quite insensible. He was bled, blistered, and leeched, and then recovered. He was in good health up to the end of July, when he was thrown from his horse, and fell with his side across a horizontal iron rod. This was followed by an attack of illness, jaundice set in on the third day, and his health generally was disordered. He suffered from frequent relapses from excess in drinking and smoking up to the time of his admission. He assigns the accident as the cause of his ailment. The diagnosis was congestion of the liver, probably injury to, and temporary occlusion of, the common bile duct, and jaundice. He was put upon suitable treatment; and, on the 13th of October, he reported himself quite well. The tongue was quite clean; the bowels relieved twice a day; the skin less yellow. He ate a chop on the 12th for the first time. On the 14th he was discharged convalescent.

Nov. 2nd.—He was re-admitted, complaining that he was passing a quantity of blood in his motions. It appears that since leaving the hospital he has never felt perfectly well; but has had no pain in his bowels. On the 29th of Oct. he noticed a small quantity of blood in his stools, which has gradually increased. He was ordered an enema, containing the solution of acetate of lead.

3rd.—Yesterday he had seven motions, each composed for the most part of blood. Two were seen; one consisted almost entirely of florid blood; the other, more copious, consisted of equal parts of blood and slimy fæces. Within the last twelve hours he has had four motions, each composed of blood and slimy fæces. Is excessively weak and pallid, with continual pain in the liver, and a burning pain just below the umbilicus, increased on pressure. No gurgling in iliac fossæ, nor pain there. Nothing abnormal can be detected in the rectum. He was ordered four grains of the acetate of lead every hour.—Evening: Still continues to pass slimy motions, mixed with blood, in about the same quantity. Ordered by Dr. Andrew, the resident medical officer, fifty minims of tincture of opium in two ounces of decoction of starch, to be given at once as an enema.

4th.—Two A.M.: Extreme rigors, weakness, and great prostration, commencing at midnight; slight wandering at times; pain at right of umbilicus, increased on pressure; pulse small and frequent. Several small, rose-coloured papulæ have appeared about the body.—Ten A.M.: Bowels not open since yesterday evening; countenance is extremely anxious; jactitation; occasional dozing; debility increased; decubitus dorsal; mouth dry; thirst.—Eleven P.M.: Sitting up in bed writing a letter in Latin, the room being dark. On being questioned, he replied incoherently; relapsed every now and then into violent sobbing, and complained of frontal pain, which seemed to be the cause of it; frequent desire to get out of bed. To have six leeches applied to the head.

5th.—Slept for two hours after the leeches, since then the same symptoms have supervened. Now there is carphology, with jactitation and partial incoherence. Slight tetanic spasm of arms once observed. Pulse 88, full and compressible; pain at umbilicus; abdomen distended and tender; no fresh spots observed, but some old ones have disappeared; tongue white and tremulous; bowels not opened since the 3rd.

7th.—Passed two solid motions, light, and slightly streaked with blood; eyes look much more yellow. Says he feels at times out of his mind. Ordered half a grain of morphia at bedtime, and half an ounce of castor oil next morning.

8th.—Did not sleep, but wandered during the night; bowels not open.

10th.—Complains of slight pain at the heart whenever he lies down upon his back; bowels opened twice from castor oil; motions loose, slightly tinged with blood; appetite pretty good; tongue slightly furred; feels much better; only suffers from debility.

He left the hospital a few days after, recovered from his present illness, although he was weak.

ROYAL SOCIETY.

ON THE SACCHARINE FUNCTION OF THE LIVER.

BY GEORGE HARLEY, M.D., F.C.S.,
PROFESSOR OF MEDICAL JURISPRUDENCE IN UNIVERSITY COLLEGE, LONDON.

ALTHOUGH it is now nearly two hundred years since our countryman, the celebrated Dr. Thomas Willis, made the important discovery of the occasional presence of sugar in the human urine, it was not, until very recently, known that the formation of saccharine matter is constantly going on in the healthy animal body.

Since Bernard, in 1848, communicated to the French Academy the discovery of the saccharine function of the animal organism, physiologists in all countries have more or less directed to it their attention. For a time various opinions were held by different observers regarding the origin of the sugar found in the body; but at length it was generally admitted that the liver had the power of forming a substance to which Bernard gave the name *Glucogen*; that this peculiar substance was transformed into sugar; and that the sugar in its turn disappeared in the capillaries of the different organs and tissues of the body.

In the summer of 1858, however, Dr. Pavy read a paper on the "Alleged Sugar-forming Function of the Liver," before the Royal Society, the object of which was to prove that the presence of sugar in the animal economy is "due to a post-mortem occurrence;" that as long as life continues, glucogen only is to be found, and not until after death does the transformation of this substance into sugar begin.

The question of the saccharine function of the liver being a subject to which I have more or less directed my attention since 1853, when I communicated to the Société de Biologie de Paris

an account of an experimental procedure whereby diabetes can be produced artificially in animals, the above-mentioned paper was to me one of peculiar interest. The conclusions of the author were so much opposed to the results of my own experiments, as well as those of other observers, that I felt anxious to test them.

Accordingly, having received the kind offer of Professor Sharpey's co-operation, I undertook a series of experiments, the results of which I beg the honour of communicating to the Royal Society.

As the experiments performed were merely a repetition of some of those made by previous inquirers, I shall not enter into detail further than is necessary to explain the precautions adopted with the view to avoid error. And, looking at the object in view, it will readily be understood why in the present instance the tests employed for the detection of the sugar were limited to caustic potash with and without sulphate of copper. The mode of proceeding was as follows:—In testing the blood, a quantity of distilled water, equal to about four times that of the blood used, was boiled in a capsule. To the water, when boiling, were added a few drops of acetic acid, and afterwards the blood was very gradually introduced. In order that the albumen might be thoroughly coagulated, a drop or two more of acetic acid were added, care being taken to avoid an excess. When the albumen was completely coagulated, which was known by its separating and floating in the clear liquid, the whole was thrown on a filter. The clear filtered liquid was then tested. The same process was followed when operating on the liver.

The first point to be ascertained was whether, under favourable circumstances as regarded diet, sugar could be found in the circulation. The following experiment proved this:—

Exp. 1.—From the carotid artery of a rough terrier dog, three hours after being fed on bread, milk, and boiled liver, a portion of blood, equal to about three-fourths of an ounce, was withdrawn. This, on being treated in the manner explained, gave distinct evidence of the presence of sugar. A second portion of blood, after standing thirty-five minutes in a room of moderate temperature, yielded a similar result.

As in this instance a few seconds elapsed between the withdrawal of the first portion of blood and its treatment with the boiling acidulated water, and as it was possible that in these few seconds the sugar might have been formed from the glucogen present in the circulation, we (Professor Sharpey and myself) thought it advisable in our next experiment to allow the blood to flow directly from the artery into the boiling mixture, and thereby avoid the possibility of sugar being produced by the transformation of glucogen after the removal of the blood from the body. It was further desired to operate on an animal in what might be considered its natural condition as to food. Accordingly one that had been running at large was selected, and the following experiment performed :—

Exp. 2.—Into the left carotid artery of a small cocker dog was inserted a canula with a stopcock. The animal was then placed so as to allow the blood to flow directly into the boiling acidulated water. The clear filtered liquid from this blood became of a yellow tint on being boiled with soda, and gave a red precipitate with the sulphate of copper and potash, thereby indicating the presence of sugar. Two ounces of blood from the same animal were similarly tested after the blood had stood twenty-four hours in a room of moderate temperature, and the result obtained was the same as with the first portion.

The next experiment was made on an animal under conditions, as regards food, unfavourable for the production of sugar. In order, too, to avoid any chance of injuring the sympathetic nerve during the operation, and thereby favouring the formation of sugar in the body, the blood was withdrawn from the right femoral artery instead of the carotid. The following are the particulars of the experiment :—

Exp. 3.—A good-sized dog was fed solely on flesh during four days. Three hours after the last meal, which consisted of half a pound of boiled horseflesh, an ounce and a half of blood was permitted to flow from the femoral artery directly into the boiling mixture. The solution obtained from this blood, as in the other cases, contained sugar. Another portion of blood, after standing three hours, was tested in the same way, and, as far as could be judged by the eye, contained a similar proportion of sugar.

In neither of the preceding cases was the amount of sugar in the blood quantitatively determined, as I had already done so on many previous occasions; and I knew that in healthy arterial blood it varied according to the state of the digestion, and the kind of food, from an inappreciable quantity up to 0·24 per cent.*

* "On the Physiology of Saccharine Urine," by Geo. Harley, M.D., British and Foreign Medico-Chirurgical Review, July, 1857, pp. 191-204.

Having been now satisfied that sugar is to be found in the blood of healthy animals at the very moment of its withdrawal from the circulation, even when none has been introduced along with the food, we next proceeded to test the grounds upon which it had been asserted that glucogen is not transformed into sugar in the healthy liver during life.

In the paper already referred to, Dr. Pavy stated that the sudden abstraction of heat from the liver after its removal from the body checks the transformation of the sugar-forming material, and thereby enables us to operate on the hepatic substance while in the same chemical condition as during life. The plan he recommends is to sacrifice a dog by pithing, and instantly to slice off a piece of liver, and throw it into a freezing mixture of ice and salt. In which case, he says, the absence of sugar is almost complete, and thence concludes that the presence of sugar in the liver can no longer be looked upon as a "natural *ante-mortem* condition;" but "is in reality due to a *post-mortem* occurrence."

In the following experiments, not only was the plan recommended most scrupulously followed, but even the risk of the glucogen in the liver becoming transformed into sugar during the process of preparing the decoction was avoided, by cutting the frozen liver into thin slices, and allowing them, while still in that condition, to fall directly into the boiling mixture of acetic acid and water. The liver was in this way prevented from thawing until it entered a medium as capable of arresting the transformation of its glucogen into sugar as the cold. The decoction so obtained might therefore be presumed to contain the soluble matters as nearly as possible in the same chemical state as they were in the living organ.

Exp. 4.—A small, but full-grown dog was fed during fourteen days solely on animal food. Four hours after a meal of boiled horseflesh he was killed by section of the medulla oblongata. The abdomen was rapidly opened, and a portion of liver cut off and instantly immersed in a freezing mixture of ice and salt. A second portion of liver was as speedily as possible detached, and quickly washed in cold water. The latter portion was then, without loss of time, cut into fragments, which were allowed to fall directly into boiling acidulated water. On testing the clear filtrate, distinct evidence of the presence of sugar was obtained. After half an hour, the frozen portion of liver was taken, without being allowed to thaw, and sliced directly into the boiling water with acetic acid. The clear liquid yielded in this case as distinct evidence of sugar as in the other. Forty minutes after the death of the animal, another portion of liver, which till then had remained undisturbed in the abdomen, was treated like the others. This gave evidence of containing a much greater quantity of sugar, thus confirming Bernard's statement, that the transformation of glucogen goes on in the liver after its removal from the body, or after the death of the animal.

In order to be perfectly certain that the sugar found in the liver at the instant of its removal from the body was really formed where it was found, and not carried there by the portal blood from the food, the following experiment was performed :—

Exp. 5.—A dog was fed during ten days on boiled tripe. Twenty-two hours after the last meal the animal was pithed. In less than twenty seconds, a portion of the liver was in the freezing mixture of ice and salt. While I boiled directly another portion of liver, Professor Sharpey put a ligature on the portal vein, and collected its blood. He likewise collected some of the hepatic blood which flowed from the cut liver.

In the portal blood not a trace of sugar could be detected. The hepatic blood, on the other hand, gave distinct evidence of its presence. Both bloods were tested exactly alike. The clear liquids obtained from the frozen liver and from the portion treated directly, notwithstanding that they were filtered while hot, and also tested while still hot, both gave distinct evidence of sugar. On the following day, a second portion of portal blood, which had been purposely kept all night in order to ascertain if, on standing some time, sugar would form in it, still yielded the same negative result. Even after treating it with saliva, which would have transformed its glucogen into sugar, had it contained any, no evidence of the presence of sugar was obtained. On the other hand, when saliva was added to the decoctions of the liver above spoken of, a great increase in the amount of sugar was observed. The quantity of sugar so obtained did not appear to be so great, however, as that yielded by a portion of the liver which remained all night untouched in the abdomen of the animal.

Professor Garrod, F.R.S., who was present, not at the commencement of the experiment, but on the following day, when the different decoctions were tested, agreed with Professor Sharpey and myself, that this experiment showed the truth of

Bernard's statement, that the liver might contain both sugar and glucogen when the portal blood contained neither.

The stomach and intestines of this animal were found void of food; the large intestine only contained fæcal matter.

For the sake of still further assurance that the sugar found in the liver was neither due to some accidental cause, nor immediately derived from food, we determined to deprive an animal of food for some days before examining the liver. The following experiment was accordingly performed:—

Exp. 6.—A very large and powerful dog, in admirable condition, was subject to a rigid fast for seventy-two hours—three full days. Immediately after death, by section of the medulla oblongata, a portion of the liver was sliced off and immersed in ice and salt. Blood was then collected from the following sources:—

1st. From the portal vein.
2ndly. From the liver (i. e., blood which flowed from the liver when a portion of it was sliced off).
3rdly. From the right side of the heart.
4thly. From the aorta.
5thly. From the inferior vena cava.

Although these bloods were all treated in a similar manner, and tested with the same quantities of copper and soda, yet none of them gave unequivocal evidence of the presence of sugar, except that from the liver. The blood from the right side of the heart gave doubtful evidence. At first sight it may appear strange that the blood from the right side of the heart should contain scarcely any appreciable quantity of sugar, while that of the liver showed its presence very obviously; but this no doubt arose from the hepatic blood being in great part prevented from reaching the heart: 1st, on account of most of it escaping into the abdomen, when the portion of liver was cut off; and 2ndly, on account of its flow being in great measure arrested by the ligature of the portal vessels.

All the bloods, except the hepatic, seemed to be free of glucogen as well as sugar; for none of them, with that exception, gave any evidence of its presence after being treated with saliva in the usual way.

On examination of the frozen liver (after three hours), which, as in the other cases, was not allowed to thaw before being put into boiling water, the decoction was found to reduce the copper readily.

On opening the stomach, nothing was found in it except some neutral mucus. The intestines were equally destitute of food, and in the rectum only a very small quantity of fæces was found; so there could be no doubt as to the animal being in a fasting condition.

The only point now remaining was to determine quantitatively the increase in the amount of sugar in the liver after its removal from the body, and for that purpose we preferred operating on an animal fed on a mixed diet.

Exp. 7.—A small dog, which had been previously fed on animal diet, received a full meal of bread and milk. Five hours afterwards the animal was pithed, and a portion of the liver rapidly sliced off, and immersed in a freezing mixture. A ligature was placed on the portal vein, and its blood collected before the circulation had ceased.

On examination, this blood was found to contain a small quantity of sugar, derived no doubt from the food. Bernard, I believe, has erred in supposing that all the saccharine matter found in the animal organism is formed out of the glucogen produced in the liver. This, no doubt, is the case in the carnivora when the diet is restricted to food inconvertible into sugar in the alimentary canal, but cannot be regarded as the natural state of things either in the omnivora or herbivora; for the food of the latter not only contains sugar, but its amylaceous elements may be converted into that substance in the process of digestion. The sugar found in the bodies of animals fed on a mixed diet ought therefore to be regarded partly as the direct product of the food, and partly as derived from the glucogen formed in the liver.

Bernard's chief argument against this view is founded on the fact that the livers of dogs fed on a mixed diet contain no more sugar than those fed on purely animal food. In my opinion, however, this fact is not sufficient to decide the question; for, as the liver does not store up sugar, the quantity it at any time contains is no criterion of the amount produced in it. Moreover, the sugar derived from the food need not be expected to be found in the liver. Had Bernard gauged the sugar present in the blood, instead of that in the liver, after each kind of diet, the result obtained would, I believe, have led him to a different conclusion. This being a point of great practical importance in the treatment of diabetes, I may be here permitted to mention that I have occasionally found nearly twice as much sugar in the blood of an animal on a mixed, as in that of one feeding on a purely flesh diet.

To return to the last experiment. About two hours after the death of the animal, portions of the frozen part of the liver, and of that which had been kept warm in the body of the animal were carefully weighed, and the proportions of sugar they respectively contained estimated by volumetric analysis.

The portion of frozen liver was found to contain 0·333 per cent., and that of the other 1·55 per cent. of saccharine matter. It is thus seen that in two hours the sugar in the liver had augmented nearly fivefold. As Bernard has shown, the simple washing out of the liver by passing a stream of water through its vessels, would remove all the sugar anteriorly formed. On placing it again aside for a short time, a fresh portion of sugar would form in it at the expense of the glucogen.

0·333 per cent. of sugar seems a small quantity; but if we suppose a liver weighing, as in man, not less than 50 oz., to contain 0·333 per cent., above 70 grs. of sugar would be present in it at the moment of death—no very insignificant quantity, when it is recollected that sugar is removed from the liver with every pulsation of the heart, to be partly consumed, and that it is as continually supplied by the organ.

The results of the experiments now related do not therefore in any way countenance the notion that sugar is not produced in the healthy animal body. On the contrary, such conclusions as they afford are altogether in favour of the generally received views upon the subject.

From the preceding experiments the following conclusions may be drawn:—

1st. Sugar is a normal constituent of the blood of the general circulation.

2ndly. Portal blood of an animal on mixed diet contains sugar.

3rdly. Portal blood of a fasting animal, as well as of an animal fed solely on flesh, is devoid of sugar.

4thly. The livers of dogs contain sugar, whether the diet is animal or vegetable.

5thly. Under favourable circumstances, saccharine matter may be found in the liver of an animal after three entire days of rigid fasting.

6thly. The sugar found in the bodies of animals fed on mixed food is partly derived directly from the food, partly formed in the liver.

7thly. The livers of animals restricted to flesh diet possess the power of forming glucogen, which glucogen is at least in part transformed into sugar in the liver—an inference which does not exclude the probability of glucogen (like starch in the vegetable organism) being transformed into other materials besides sugar.

8thly. As sugar is found in the liver at the moment of death, its presence cannot properly be ascribed to a post-mortem change, but is to be regarded as the result of a natural condition.

Medical Societies.

MEDICAL SOCIETY OF LONDON.

MONDAY, OCTOBER 8TH, 1860.

DR. A. B. GARROD, F.R.S., PRESIDENT.

THE Society held its first meeting for the session this evening. There was a goodly assemblage of Fellows and visitors. It had been announced that Dr. Richardson would read a paper; but owing to some misapprehension he did not do so.

Dr. THUDICHUM accordingly read a communication

ON SOME CHEMICAL QUESTIONS IN CONNEXION WITH DISEASES OF THE LIVER, AND THEIR TREATMENT.

The author first referred to a paper on Gall-Stones by himself formerly read before the Society. In it he had stated that he had observed, in the centre of some biliary calculi, certain peculiar pathological formations, which he interpreted as casts of the biliary ducts; and that this interpretation had been confirmed by many others to whom he had shown the specimens.

The casts of the biliary ducts, thus described, were found by Dr. Thudichum to contain a large quantity of cholochrome (colouring matter of bile) precipitated in a granular form. The presence of this substance was evidently not due to mere imbibition, but denoted the breaking up of the process by which it had been held in solution in the healthy bile. This had led Dr. Thudichum to investigate the properties of cholochrome;

and he had arrived at certain results in regard to it, part of which he had communicated to the Physiological Section of the British Association at Oxford, and to the British Medical Association at Torquay. He now proceeded to recapitulate these results, with additions; then to construct a doctrine of the formation of gall-stones; to describe some original investigations on the parenchyma of the liver in health and in disease; and to give some hints as to the treatment of liver diseases.

Dr. Thudichum gave an account of the experiments he had made with the view of determining the composition of cholochrome. He then went on to describe some experiments which he had made on the changes undergone by bile during putrefaction. Some large bottles, full of bile, had been allowed to stand for two years and one year respectively. The bile had assumed a feebly acid reaction, a bright port-wine colour, and had deposited a copious flaky, green-and-brown deposit, mixed with white chalk-like particles and greenish crystals. This deposit, on analysis, was found to consist of cholochrome, cholic acid, phosphate of lime, and magnesia, in dichroic crystals and mucus. The fluid part of the bile was found to contain cholate of soda, taurine, and acetate of soda, phosphate of soda, and some valerianate of ammonia; but no glycocoll, nor any tauro- or glycocholic acid. It was quite clear that the bile had spontaneously undergone that decomposition which is effected by boiling with acids or alkalies—a decomposition which, in its main features, has already been described by Gorup-Besanez. Glycocholic and taurocholic acids had split respectively into glycocoll, taurine, and cholic acid. Some valerianic acid had been formed from some decomposing substance or other, which had combined with ammonia, probably arising from the decomposition of glycocoll. Glycocoll, being the amido-acid of acetic acid, no doubt in this process, as in the putrefaction of urine, yielded the acetic acid, which combined with the necessary amount of soda, and precipitated a portion of the cholic acid; while the greater portion of this acid remained in solution, combined with soda. The cholochrome had, no doubt, been precipitated by the new acid before cholic acid, as its acid properties are much less pronounced.

In examining human gall-stones, Dr. Thudichum had found a resinous matter, of which, however, he had been prevented by the small quantity and other difficulties from determining the composition. In ox gall-stones, however, he had succeeded in finding cholic acid, in such quantity that there could be no doubt of its having been deposited with the cholochrome during the formation of the concretions in the living animal. The presence in almost all biliary concretions of earthy and alkaline salts pointed in the same direction. These were either present in the form of phosphates and carbonates of lime and magnesia, or were combined with the colouring matter of the bile. In gall-stones from man, the colouring matter was accompanied by a larger proportion of inorganic salts; but in gall-stones of the ox, the quantity of cholochrome preponderated to so extraordinary a degree over the earthy matter, that it must be assumed to be present in the free state, and not as some have supposed it to be always—namely, combined with lime.

As matters now stand, essential constituents of gall-stones seem to be cholochrome, cholic acid, and earthy salts. In man, gall-stones contain a large amount of cholesterine in most cases; but that is a secondary and accidental ingredient, and is mostly crystallized around the other matters forming the nucleus. There are human gall-stones which, like those from the ox, contain no cholesterine. Others are said to consist entirely of cholesterine—a statement which requires to be verified by fresh analyses, which must prove the absence of cholic acid. Stearate and palmitate of lime are usually present in human gall-stones. The idea of an inspissation of mucus in the formation of gall-stones was shown by the author to be untenable; the binding material of the concretions is cholic acid.

The process of the formation of gall-stones was explained by Dr. Thudichum to be perfectly analogous to that which produces phosphatic calculi in the urinary bladder. The compound amido acids (taurocholic and glycocholic) split up under the influence of a cause of which the nature remains to be ascertained—probably a ferment from the intestinal canal. They deposit cholochrome and a portion of cholic acid, some salts, and a little fat, under the influence of acetic acid derived from glycocoll. In man, gall-stones contain cholesterine; this has, in the healthy bile, been held in solution in taurocholate of soda; but when the taurocholic acid is decomposed, the cholesterine is set free, and is deposited on any particles which may be at hand. In other words, the process of formation of gall-stones is the following:—

Healthy bile contains taurocholic and glycocholic acids, in combination probably with soda. Under the putrefactive change, these two acids split up; the taurocholic acid yielding taurine; and the glycocholic acid, glycocoll. Cholate of soda is left; the glycocoll is destroyed, and is transformed into acetate of ammonia. Valerianic acid is also formed, and combines with the ammonia from the glycocoll. Some free acetic acid then sets free the cholic acid from the cholate of soda, and the cholic acid is then precipitated in combination with cholochrome, so as to form casts of the tubes. This takes place in the ox; in man, cholesterine is also deposited in consequence of the breaking up of taurocholate of soda, which has held it in solution.

Within the last few weeks, Dr. Thudichum had examined the products of decomposition of fibrine, and had found amongst them cholesterine; which, with a gritty matter and an oil-like body, were left when all the matters soluble in water were removed. The presence of cholesterine and gritty matter in atheroma led to the question whether this condition was not a simple result of the decomposition of fibrine or of albuminous matter from which the earthy particles had been washed out. It was further a question whether the cholesterine in gall-stones might not in part arise from the decomposition of cholic acid.

Dr. Thudichum then noticed that the healthy action of the liver-cells consists in the absorption of certain albuminous, fatty, starchy, and saccharine matters, and their transformation into the ingredients of bile. When this becomes impaired, the cells assume a fermentative tendency, leading to the same description of decay in the albuminous matter as that which is induced by putrefaction or by treatment by acids or alkalies. He then proceeded to point out that the general principles elucidated in his paper could be applied in the treatment of all liver diseases. In jaundice with obstruction of the biliary ducts, we should make early use of nitric acid or nitro-hydrochloric acid. He had with great benefit given a watery solution of nitrous acid. It is easily made, and may be drunk as a pleasant lemonade. It is less apt to produce griping, which, during courses of nitric acid and aqua regia, is not rarely complained of. This acid not only destroys and lixiviates the deposits of cholochrome and other amido-acids, but it also tones the digestive organs, and acts antiseptically. Nevertheless, a remedy to stay the abnormal action of the liver cells we are yet in want of. Creasote is beneficial. In all cases where the disorder of the liver proceeds from the intestinal canal particularly, creasote, charcoal, astringents like gallic acid, and preparations of iron, particularly the tincture of the sesquichloride given together with some nitric acid, are highly beneficial. In a case of desquamation of the epithelium of the kidneys consequent upon chronic jaundice, he had exhibited this latter mixture with the most decided benefit.

Nitric acid was introduced into the treatment of these diseases by Annealey. Many have used it since, with variable success. Dr. Thudichum believed that it is frequently not borne because it is not sufficiently diluted. The more it is diluted, the quicker it is assimilated, and the more certain are its effects.

It might appear paradoxical that a free acid should travel through the blood, and act upon certain parts through tissues. We are, nevertheless, obliged to admit the possibility of that occurrence. Thus oxalic acid and many other acids have been proved to have passed through the blood uncombined, and have been found in the urine in a free state. Even allowing that blood so mixed with nitric acid might show a precipitate, there is no reason why a molecular precipitate in the blood, which is full of molecules of its own, should not again dissolve.

All liver diseases require the greatest attention to the intestinal canal. Mild purgatives, of salts, or fruit, Pullna water, Seidlitz powders, water containing one per cent. of ordinary chloride of sodium and a little sulphate, are the best remedies. If stronger purgatives are required, the vegetable ones deserve preference. The fatal error of treating with mercurials the various disorders of the liver, he could not sufficiently deprecate.

The diet should be juicy, include fruit and vegetables, and eggs and meat. Starch and fat are always badly digested.

The skin must be well attended to. Baths, with some aqua regia, stimulate the skin and open the epidermis.

In true bilious attacks, with indigestion, a furred, sometimes yellow tongue, constipation, sickness and vomiting, headache, yellow appearance of face, and albugines, he had found the use of blue pills mostly hurtful. Whenever he had been called upon to treat such an attack, his treatment had to deal with the effects of the biliosity and blue pills combined. In cases where such attacks, without previous excesses, become habitual, gall-stones are not rarely developed. I have known two cases

end in phthisis. One, that of a gentleman, married, about forty years of age, is yet under observation. In many cases of phthisis, in which gall-stones are found after death, this habitual biliosity did not rarely precede the disease of the lungs. But phthisis may also produce gall-stone disease.

Lastly, he adverted to the use of soluble phosphates. He had made the observation that bile contains no small amount of phosphate of soda. Without this salt, the assimilation of the fats must needs be imperfect. Considering, therefore, that the absence of the phosphate may be hurtful, and that its presence never has been found to be so, he was inclined to give it a further trial. It should be given in the food, together with chloride of sodium, or in a dilute solution in water. Since he exhibited before this Society the action of phosphates upon fatty acids, with which they produce an emulsion ready for transition into the blood, he had thought of combining the acids of cod-oil with phosphates, in order to make this substance more generally digestible.

Liebig has long since shown that the most pleasant manner of giving soluble phosphates consists in the administration of beef-tea; but where this extract cannot be had in a quite reliable form, a weighed quantity of the ordinary phosphate of soda, say to the amount of half a drachm or a drachm per day, or more where it is liked and well borne, is preferable.

In bile, soda preponderates over potassa. In the substance of the liver the proportions are reversed. The relations of these two bases require further study. It is not probable that the one may substitute the other, and *vice versâ*; and hence the one may substitute the other, and hence the want of potassa may become a source of disease. It is known that this base prevails in the muscles, soda in the blood.

By thus attacking the liver from all sides, we shall soon succeed in obtaining a surrender of its secrets. This organ can in this way only be stimulated, while it is out of the reach of so-called medicinal stimulants. Torpid liver, sluggish liver, and the like, may be useful practical denominations; but they are not based upon any positive evidence. We want much less cholagogues than we require remedies to appease, subdue, and change the activity of the liver. The organ is accused of much of which it is not guilty. It is by the mouth that most diseases enter; and it is from the insults received from the direction of the intestinal cavity that this patient and enduring organ mostly derives its detriment.

A discussion of some length ensued, in which several Fellows of the Society took part. It had reference, however, chiefly to the elucidation of certain points in the paper, and did not afford material for a report.

MONDAY, OCTOBER 15TH, 1860.

DR. RICHARDSON read a paper

ON THE PHYSIOLOGICAL AND THERAPEUTICAL PROPERTIES OF THE PEROXIDE OF HYDROGEN.

This substance, which was discovered by Thénard in 1818, is, in fact, water charged with oxygen in the active state. In his paper, Dr. Richardson took up the following points:—The history of the substance; its preparation, with special regard to pharmaceutical applications; its physical and chemical properties; its relations to ozone; its physiological properties; its therapeutical value.

It was obvious from the author's description that some obstacles lie in the way of the application of the peroxide of hydrogen for medicinal purposes, owing to the difficulty experienced in its manufacture. This difficulty, however, Dr. Richardson greatly simplified; and we should infer that any experienced pharmaceutist could supply the medicine after a short acquaintance with the process of making it, as readily as quinine or other remedial bodies in preparing which time and care are the most important requisites. It was shown, indeed, that if perfectly pure peroxide of barium were supplied to the profession, every practitioner in the country could make his own solution of oxygen as he might want it.

The description of the chemical and physical properties of peroxide of hydrogen was unusually interesting. Passing over the facts relating to the influence of inorganic bodies upon it, those bearing on organic matter strike one most forcibly. Thus blood freed from fibrine absorbs the oxygen from the peroxide, and, if it is venous blood, it becomes arterial, with a rise in the temperature. Washed fibrine and cellular tissue in the fresh state evolve the oxygen. Albumen, urea, gelatine, fibrous membrane, and skin, produce no change. Grape sugar, and indeed all the sugars brought into contact with it, become decomposed, and evolve carbonic acid. Starch undergoes the same modification.

These observations refer to animal substances recently used; but when putrefaction has commenced, then the oxygen of the peroxide seems to act on all alike, and to produce rapid disintegration.

Another curious fact relating to the peroxide was, that its oxidizing power was easily prevented by the presence of certain bodies having a wide extension of names, but analogous characters. Ammonia in vapour or solution, tobacco, hydrocyanic acid, solution of aconite, and, in short, all the narcotics that are miscible with water, possess this neutralizing property; the permanency of the result being decided by the physical character of the agent employed.

The section of the paper on the relations of the peroxide of hydrogen to ozone was an interesting one, and indicated a careful study of this debated question. It is clear that Dr. Richardson looks upon the two bodies as one and the same. If he has any doubt, it is to the effect that in peroxide of hydrogen there is not any affinity at all between the two elements, hydrogen and oxygen. We pass the matter over to dwell on the physiological actions of the peroxide. These seemed to arrange themselves into the following brief propositions:—A weak solution oxidizes blood; but this effect can be stopped by the action of the alkaloids and of narcotics. The peroxide supports the life of fishes; but the body of the animal causes rapid evolution of the gas. The solution injected into the left side of the heart of an animal restores the irritability, but appears to have an opposite effect on the right side. Injected into the arterial system immediately after death, it seems to restore to the muscles the power of contracting on the application of an irritant. It suspends to a considerable extent post-mortem rigidity, and it reduces spasmodic action, excited by such bodies as ammonia and hydrocyanic acid. On the therapeutical value of this powerful agent, Dr. Richardson did not dwell long; but reserved this essential point for another communication. He showed, however, that as an antidote to the alkaloidal poisons, as an external application to decomposing sores, as an internal remedy in fever, where the patient literally dies from deficient oxygen, and in diabetes, the medicine might be used with the very best promises of success. In the way of a pleasant acid drink, one could give, said Dr. Richardson, to the typhus-stricken man 100 cubic inches of active oxygen per hour. In diabetes, one fact had been made out also by the author, that, under the influence of the peroxide, the quantity of sugar at once became less, and the excretion of urine decreased in a relative degree. After illustrating his paper by experiment, Dr. Richardson concluded by stating that, in placing it on the annals of the Society, he would guard himself, once and for all, from any exaggerated suggestions as to the value of this new remedial agent. The subject, indeed, was so novel, that after twelve months' study of it he had feared to use a sentence that had not been considered over and over again. He did not pretend to know all the properties of the peroxide. He did not bind himself inviolably to any opinion offered on the present occasion; nay, experience might show that the substance discussed in a medicinal sense took new and even different directions from those with which he had opened the argument. His own intentions and objects would be served if he did but call forth investigation and fact, let the course of events bend in whatever way they might.

Dr. THUDICHUM expressed an opinion that the peroxide of hydrogen, as made by Thénard's process, could not be altogether freed from chlorine; and suggested that the substance should be made by the simple sulphuric acid process. He also dwelt on the fermentation theory in relation to certain of the effects of the peroxide. He expressed a disbelief as to the existence of "ozone."

Dr. LANKESTER asked Dr. Richardson whether oxygen, as it was liberated from the solution, was in the active state; and Dr. Richardson having answered in the negative, Dr. Lankester proceeded to defend the ozone theory. He believed with the author of the proposition to use the peroxide of hydrogen as a medicine, that great therapeutical effects would come from it. He suggested experiments to determine whether the amount of excreted matters—such as urea and carbonic acid—would be influenced by the administration. It was a remarkable fact, that so powerful a substance should so long have remained uninvestigated as a medicinal agent.

Dr. GARROD compared the chemical effects of the peroxide of hydrogen with the effects of the permanganates. He had tried the permanganates in diabetes; but he thought with the effect only of increasing the amount of sugar. He would wish to hear whether the physiological effects of the peroxide and of a permanganate were the same. It might be that the saline character of the latter produced a difference.

Dr. RICHARDSON, in reply, said that in regard to the pro-

sence of a trace of chlorine in the solution, it made no difference; for the effects of chlorine-water were very analogous, and it might turn out ultimately that a direct relationship could be traced between chlorine and oxygen. Thus water boiled free of oxygen, and charged very feebly with chlorine, would, as he should show on another occasion, support the life of a fish longer than the water altogether destitute of oxygen. In respect to ozone, he had no doubt that such a substance existed, and he was inclined to think that it was a modification of oxygen. He thought that in testing the effects of the peroxide of hydrogen, it were best to try it in disease without any further intermediation, selecting for its trial extreme diseases, such as were not at this time amenable to treatment. The actions, *physiologically*, of the peroxide of hydrogen and of the permanganates were entirely different: the latter injected into the veins of a horse produced permanent fluidity of blood, and transformed the blood on the arterial side to the venous colour. The difference depended on the fact that in the permanganate the oxygen was combined, while in the peroxide it might be considered as virtually free.

Dr. Garrod, Dr. Radcliffe, and several other Fellows, observed that they should be anxious to give the peroxide a fair trial as to its therapeutical value; and inquiry was made as to the means of obtaining the solution.*

Reviews and Notices of Books.

THE JOURNALS FOR THE QUARTER.

IN the *British and Foreign Medico-Chirurgical Review* (No. LII.) the present state of "French and German Psychology" first occupies notice. M. Moreau's late work undergoes analysis; and although the writer admits that M. Moreau's theory "is startling and in a measure novel," yet he maintains it is based upon the well-established physiological axiom, that excess of vital energy involves an undue expenditure of material force, and consequently imperils the integrity of the material organization. The writer further maintains that he is acquainted with very many facts, independent of those brought forward by the propounder of the theory, which directly sustain M. Moreau's position. This extraordinary position is, that

"The mental characteristics which distinguish one man from another, by the originality of his thoughts and conceptions, by his eccentricity, by the energy of his affective or by the transcendancy of his intellectual faculties, have their origin in the same organic conditions as the various moral disturbances, of which insanity and idiocy are the most complete expressions."

According to M. Moreau, not only is the poet akin to the madman, but the philosopher is brother to the fool. *Genius*—the *ne plus ultra* of intellectual activity—is nothing but the highest expression of *nervousness*, or is but a state the necessary material substratum of which is a semi-morbid condition of the brain. The aristocracy of talent is composed of only a glorious group of madmen: *Credat Judæus Apella, non ego.*—In a review of Dr. Todd's work upon "Acute Diseases," it is well shown that the peculiarity of that physician's treatment of these affections consisted in administering large doses of alcoholic and other stimulants from an early period of the disease, rather than in abstaining from antiphlogistic remedies; that there was no novelty in this treatment, but that the latter was merely the revival of one which, more than half a century ago, held sway for a brief period of years.—"Norse Obstetrics," "Robert's Clinical Surgery," "Yellow Fever in Lisbon," pass consecutively under notice. Reviews of the "Recent Literature of Pulmonary Disease," of the "Transactions of the Obstetrical Society of London," of Bucknill, Laycock, and Winslaw on Psychology, carry us on to the tenth article. The latter is occupied with Mr. G. H. Lewes's "Physiology of Common Life." The author meets with some castigation, but not more than he merits; and we think that the reviewer's summing up is about the best judgment which we have seen upon "the superficial studies carried on for a few years by a pretentious individual" within the comprehensive domains of physiology:

"Whilst we deem Mr. Lewes's book to be utterly unsafe as a guide to the student, it presents many features of suggestive interest to readers who are capable of using it aright; and the ingenuity as well as the boldness with which the author calls in question the received opinions on a great variety of topics are well calculated to stimulate their defenders to place them, by new and additional defences, beyond the power of even the most dexterous and unscrupulous assailant."

The last article in the first division of the Review is upon "Amyloid Degeneration," and is a very interesting *résumé* of our present knowledge upon this rather obscure subject. The original communications are "Morgan on Phthisis in the Hebrides," "Ogston on Death by Cold," and "Murray on Teratology." Rumour says that with this number the Editor, Dr. Sieveking, resigns his post.

We have this time only a very small portion of the *Journal de la Physiologie* of Dr. Brown-Séquard (tome iii., No. 12). The more important of its contents are formed by the conclusion of M. Dor's memoir upon "Refraction of the Eye," and the continuation of Dr. B. W. Richardson's paper upon the "Synthesis of Cataract."

The *Journal of Psychological Medicine and Mental Pathology* (No. XX.), takes up "Suicide" in its introductory Psychological Quarterly Retrospect; and is treated in that practical and interesting manner common to this department of the journal. The state, condition, and statistical relations of lunatics at the present time receive full consideration; whilst articles upon "The Modern Drama," "Modern Developments of the Marvellous," "Braidism," and "On the Amelioration of Races by Education and Intermarriage," afford interesting matter for perusal by those who are not professed alienist physicians.

The *Journal of Mental Science* (vol. iii., No. 25) gives us a more than usually interesting number. We have in it the Address of the President at the late meeting of the Association of Medical Officers of Asylums and Hospitals for the Insane, as well as the official Report of the Proceedings at the late meeting. The latter is followed by "A Case of Homicidal Mania," read at the meeting by Dr. Davey. The case is that of the unfortunate Dr. James Pownall, who, after being discharged as "recovered" by the author, within three weeks murdered the female servant of Mr. Leete, by cutting her throat with a razor. Dr. Pownall is now under the care of Dr. Hood, at Bethlehem. In the course of the discussion which followed the reading of the paper, Dr. Hood made, amongst other observations, the following:—

"A patient was placed in Bethlehem twenty years ago..... by the Board of Green Cloth, for having annoyed her Majesty on one occasion, in Rotten-row, by presenting a petition to her praying for some place under Government. I believe I may say that for the last fifteen years he was in the asylum without presenting any symptom of a recurrence of that particular character, and during the last eight years without any symptom of insanity at all. After a very strong effort, I was fortunate enough to obtain his discharge from the Secretary of State. He had not left me five months before I had a letter from Lord Palmerston, wishing to know if I was aware that such a man was at large; having, perhaps, thought that he had escaped without my knowledge; and he sent me three or four letters that he had received from this patient for presentation to the Queen, and asking for the hand of the Princess Alice. I was sent for to the Home Office, and, upon examination, I found the patient was as insane as he ever had been, and had delusions of precisely the same character as those he entertained twenty years ago. That occurred within five months, and it might have occurred within one month; and if the man had stopped her Majesty in Rotten-row, the Commissioners would have called out, and the public would have called out, 'Good God! what could Dr. Hood have been thinking of in discharging such a man?' I offer this as evidence of the way in which we may be deceived, and to show how impossible it is, however well we may know the antecedents of the patient, to know what his character will be after he leaves us."

The Rev. Mr. M'Ilwaine's paper upon "Ulster Revivals,"

* The peroxide of hydrogen may be obtained of Bullock, Princes-street, and of Perrins and Barnitt, Conduit-street.

and Dr. Tuke's upon "General Paralysis," are worthy of particular mention.

The *Edinburgh Veterinary Review* (No. VIII.) continues its useful career. The present number contains much appropriate matter in connexion with veterinary education. There is a reprint, also, of an original article of Edward Jenner, upon the "Distemper in Dogs." The more solid matter of the journal is, as usual relieved by sundry trials for breach of warranty in horse cases.

We have received the Fifth Number of the *North American Chirurgical Review*, containing critiques upon Toynbee, Todd, Bryant, and others.

THE MEDICAL PROFESSION IN TURKEY.

(FROM OUR OWN CORRESPONDENT.)

THE present condition of Medicine in Turkey, and the important events which seem inevitable to all, demand especial notice from me just now.

I will first briefly draw your attention to the state of our profession, more particularly in the capital, thirty-five years ago. At that period, the city of the Sultan could muster only about six regularly qualified physicians. These gentlemen were the consultants in most cases of difficulty. In addition, there were twenty or thirty men who, having received no medical education, yet having first practised as apothecaries over the counter, and being men of general intelligence, gradually assumed the title of Doctor. The poorer classes and many persons in the middle sphere consulted the apothecary of their district in medical cases; the "kurulikjy," or bone-setter, in surgical cases; and the midwife in obstetric cases. Attendant on these different professors were the barbers, who recommended this or that particular apothecary, bone-setter, or midwife, in proportion as the one or the other ordered leeches to be applied, cuppings to be performed, or blood to be extracted. The apothecaries recommended their patients to be bled at regular periodical dates; by this means they gained the estimation of the barber, the confidence of their patients, and the demand for medicine, which added money to their coffers. The physicians acquiesced in the custom, and gained a good dependency therefrom. The army medical men were chiefly youths who had been in apothecaries' shops for a year or two, and had acquired a smattering of the names of diseases; but of these there were few, until the institution of the new order of soldiers, the "Nizam."

When Sultan Mahmoud destroyed the Janissaries, and instituted the "Nizam" army for his nation, founded on European principles, he found it necessary to institute a medical school, which was established at Galata Serai in 1827. Although this school has at times had various professors, whose names are a guarantee for their professional ability and integrity, yet, strange to say, a very small proportion of men educated there simply have at all acquired a knowledge of anatomy and physiology, and, of course, much less of surgery. Feeling their own ignorance, and the medical school from time to time knowing it, the medical officer in charge of a Turkish regiment, in any way qualified, has been called a "physician," his duties being strictly medical; whilst all surgical accidents, such as gunshot wounds, &c. &c., were supposed to be treated by the "Djerrahs" surgeons, or indeed, in reality, by the barbers, who, although they no doubt had acquired some dexterity in setting fractures, &c., from experience, were yet quite unacquainted with the anatomy of the human body. The position, too, of these surgeons, as they were called, would not induce any man, even of a very inferior medical education, to undertake it; every facility being offered to make him a physician, who on his appointment would receive a salary and allowance of about £180 per annum, with the opportunity of private practice, and the rank of captain or sub-major. The majority of the physicians were Greeks or Armenians, enticed by gain; a few were Turks, Germans, or Italians. Occasionally a Pole or Hungarian, well qualified, embraced this service.

When the war broke out on the Danube in 1853, such was the state of the Turkish army as regards surgeons, that not more than one per cent. of soldiers suffering from severe gunshot wounds in 1854 recovered; so that, seeing the great necessity for English surgeons in the field, General Cannon, then Beiram Pasha, strongly recommended to the Turkish authorities the advisability of obtaining such assistance. Omer Pasha, having considered it necessary, agreed with the idea. The Ottoman Government having written to their ambassador in London, Messuris Bey, an attempt was made in the autumn of 1854 to obtain ten surgeons and ten assistant-surgeons; the former were to be paid £20 per month, and the latter £10 with rations, with promise of promotion, if they remained, to the same rank as the medical officers attached to the Turkish army—viz., the surgeons that of lieutenant-colonel, and the assistant-surgeons that of major, with rations valued at about £12 per month more. But so little faith was there in the Turkish authorities, that very few young men could be induced to join; only one first class and two second class, I believe, accepted the offer.

After the attack on Eupatoria in February, 1855, by the Russians, and the sad havoc which, previously, disease had rapidly made on the soldiers of Omer Pasha's army, further representations were made; and the Duke of Newcastle determined to form a staff efficient in every particular. This consisted of one inspector-general, one deputy inspector-general, sixteen second-class staff-surgeons, the same number of assistant-surgeons, three dispensers, and a storekeeper or superintendent-apothecary. The destination of this staff was Eupatoria. Many of the surgeons were intended to remain at a large hospital, to contain 3000 beds, at that place; others were to accompany the army in the field, and to have entire charge of the surgical cases. Through the opposition of the medical school at Constantinople, this staff remained for several months in a partial state of inaction, owing to the refusal to give up an hospital and to find the necessary furniture; and no doubt it never would have done anything if Mr. Farquhar, the acting inspector-general, had not used extraordinary energy and activity in laying before and enforcing on the officials the absolute necessity of support. At Varna, at the battle of Ingour, and at Trebizond, the staff did immense service.

In May, 1856, the staff was broken up; and although some of the surgeons offered to remain, in no instance did the Turks accept their proposals. Since that time the Turkish army has been supplied with medical officers from the Turkish Medical School at Coumberhaneh. Owing to the great waste of money at this school, the attention of the Government has been directed to it; and, seeing its utter uselessness, it has been determined to close it. A vast sum has for a long time been squandered to support professors whose offices were merely sinecures, many of them being held by persons who took no interest in their pupils, and who only sought the appointment for the sake of its emolument. Almost every petty state in Europe has its representatives at this board. The English alone are not represented, owing, it is said, to the great *penchant* of the British ambassador for foreigners, who, if they apply to him, are sure to be successful.

From the great distress in Syria, it is not too much to expect that the plague may break out; and if it does, there will be a fearful mortality. If war begins on the Danube, a state similar to that in 1854 must inevitably follow.

COLLEGIATE FINANCES.—From a report just published of the receipts and expenditure of the Royal College of Surgeons of England in the year from Midsummer-day 1859, to Midsummer-day 1860, it appears that the former amounted to £22,307 9*s.* 8*d.*, from the following sources, viz.:—Diploma of Member, £14,355 10*s.*; certificate in Dental Surgery, £929 5*s.*; licence in Midwifery, £198 9*s.*; Fellowship, £840; certificate of Membership, £5 5*s.*; sale of List of Members, Catalogues, &c., £15 3*s.* 8*d.*; dividends on investments in Government securities, £1207 14*s.* 6*d.* The disbursements amounted to £21,906 18*s.* 3*d.*, including the sum of £7761 18*s.*, the balance for the purchase of the freehold property adjoining the College. From the report from which we extract the above, it appears that the incidental income of the College amounts to £21,099 15*s.* 2*d.*; and the permanent income to only £1207 14*s.* 6*d.* The incidental expenditure is put down as amounting to £18,173 12*s.* 2*d.*; and the permanent expenditure to £3733 6*s.* 1*d.*

THE LANCET.

LONDON: SATURDAY, OCTOBER 20, 1860.

WHAT is Spiritualism? We presume the apostles of this ancient delusion, by way of making good its claim to a rank amongst sciences, will reply, What is gravitation? We do not know gravitation in its essence; we can but observe and reason upon its phenomena. Well, then, what are the phenomena of Spiritualism? The most remarkable are table-rapping, table-moving, and clairvoyance. Odd people, having abundance of faith,—for we shall presently see that unquestioning credulity is the indispensable condition for appreciating these phenomena,—affirm (and we do not doubt their word) that they hear tables rapped, and see them pirouette and dance, but do not see the rapper or the mysterious ballet-master. This is what they see and what they do not see. But they are not content with the enjoyment of witnessing these feats of legerdemain. They must needs bring minds ignorant of physical science, and unskilled in the analysis of evidence, to the unequal task of accounting for and deciding upon the nature of the invisible forces which rap tables and make them jump. And, still more strange, they confidently relate their conclusions—the mental deductions by which they arrive at the opinion that no physical agency was at work in producing the only phenomena of which their senses were conscious—namely, the rapping and the dancing—as a fact of their own personal *experience!* "Sir! "do you presume to insult me by saying I didn't see the table "dance, and by doubting my word when I tell you that nobody "moved it or could move it?" This is the indignant logic of the spiritualist. He confounds what he sees with what he cannot see and only infers, and relates the jumble as unquestionable experience. Formulized, the spiritual proposition is this: The table was seen to dance; tables do not dance unless some compelling power, physical or spiritual, be applied to them; no physical power could be detected in action by the observer: therefore the moving power was spiritual. *Q.E.D.* The weak point in this argument is, that it does not follow, because one observer, or a dozen, or a hundred, failed to detect a physical power operating upon the table, therefore no such power was applied. Other persons more acute might have detected it. Moreover, we cannot be expected to surrender, at the hot summons of a few score of purblind enthusiasts, the long experience we possess of the physical laws of the universe. Experiment and observation have long taught mankind that motion is the result of physical force. We can, by setting in action various modifications of physical force which are at our command, produce a great variety of motions. We have no example, except in the apocryphal experiences of the spiritualists, of any power that is not physical producing motion. We know of no kind of motion that cannot be satisfactorily explained by the action of physical forces. We are not, therefore, placed under the smallest necessity of seeking beyond these for the cause of motion. The universe is obedient to physical forces. If spiritual forces could be supposed to operate anywhere, it would surely be in those etherial regions of space far beyond the reach of this gross material earth. Not many years ago, two profound philosophers sitting in their cabinets, one at Cambridge, the other in Paris, announced to the world that if the heavens were searched in a point they exactly indicated, a new planet, hitherto unknown and unsuspected by astronomers, would be discovered. Neither pretended to have seen the planet; it was known that they had taken no means to see it; all they said was, Let those look who have telescopes, and there they will see the planet. Astronomers looked, and with admiring awe beheld. Now suppose that astronomers were credulous spiritualists, and that ADAMS and LEVERRIER had chosen to suppress the methods by which they had mentally discovered their planet, with what assurance might not these sagacious mathematicians have pretended to a gift of clairvoyance, which had enabled them from their closets, through millions of miles, to see with the soul's eye that orb hidden to ordinary mortals, and even beyond the ken of their own material senses? Has clairvoyance any feat to record comparable to this? The most cunning medium soars no higher than to read blindfold; to look into your chest or your stomach; to tell you what is passing in some distant spot; and, perhaps, to call up the spirit of SHAKSPEARE and consult him upon any foolish matter that may be propounded. Their revelations must be accepted as they are uttered; for you have no opportunity, like the astronomers, of verifying the truth or falsity of what they say. There may be an ugly ulcer in your stomach, but you don't feel disposed to submit to vivisection in order to convince the bystanders. And when put to a test that does admit of verification, the medium fails. These gentry avowedly practise their art, and maintain their *rapports* with the world of spirits, for pecuniary motives. They live by their profession. Yet if you enclose a bank-note, which they would willingly clutch, in an envelope with proper precautions, they cannot tell you the number, although they might have it for the information. In the emergency they call their familiars from the vasty deep, but the spirits will not come, and your bank-note is safe. The late Sir PHILIP CRAMPTON deposited a sealed note for £100 for a whole year in a bank at Dublin as a reward to the medium that should reveal the number. He had hundreds of guesses, but no true revelation. The year passed, and the worthy baronet's balance was not diminished. In these days of political convulsions, any man might make an easy fortune if he could but anticipate the electric wires, and learn what was going on abroad. But no such fortunes are made by unhappy mediums. The poor creatures are fain to be content with eleemosynary half-crowns extorted from *gobe-mouches* for telling them most absurd and unprofitable things. Their conduct in this respect, indeed, is a miracle even greater than table-moving. If we exclude the hypothesis of imposture, then we must regard mediums as exemplars of such transcendental virtue as the world has never seen. They are eager to clutch half-crowns as fees for the exhibition of trumpery tricks, and at the same time practise the sublime of self-denial, by remaining poor whilst possessing the means to compass fabulous wealth and boundless power.

There is one transparent proof of imposture or hallucination: the utter barrenness and uselessness of all these degrading superstitions. What good does it do to make a table dance? It is not the proper function of a table. At sea, lest tables should indulge in inconvenient vagaries of this kind, they are lashed to the decks. Of what use is it to know what SHAKSPEARE's ghost thinks upon a given question in history or

morals? Why pay a medium to be told what is contained in a sealed envelope, when you have but to break the seal and know with absolute certainty? Your medium is impotent to see more than other men where the question is to benefit himself or society. Not a fact, not a discovery, do we owe to the brotherhood of visionaries. Can they who can read with the umbilicus, see through a mahogany door, and converse with spirits, tell us who is the murderer of that poor child at Road? Or is this an example of murder by spiritual forces? No one saw the deed done; no physical agent can be detected. Therefore some spirit did it. The spirit that can make a table leap, can cut a throat. Is not the logic perfect? Now, since mediums are spirit-compelling, let one of them place himself *en rapport* with the immaterial criminal, and put an end to that incubus of mystery that oppresses and appals the public mind. We are far from wishing to suggest that mediums will constrain their familiars to commit murder as well as to move tables. But does it not strike well-meaning clergymen and others who patronize the spiritual delusion, that if one thing is possible so is the other; and that to promulgate the theory that material acts can be done by immaterial agents, is to complicate very seriously the rules of evidence, and to endanger those laws upon which the safety of society reposes? We do not, indeed, apprehend any such result, because a preliminary condition is that the majority of the world shall sink to the degraded intellectual level of the believer in Spiritualism. But certainly the result we have alluded to must follow, if the ravings of Clairvoyance were generally accepted as demonstrated truths of Nature.

We have adverted to this subject with a reluctance that amounts to loathing. It is a lamentable task to be called upon to notice seriously a moral epidemic, even upon a limited scale, which implies such an utter defect of reasoning power—such debasing superstition; and that, too, in men and women who claim to belong to the educated classes. In our self-conceit, we deplore the ignorance of our forefathers who hanged and drowned witches. But wherein lies the difference between the witches of old and the mediums of to-day? They do the same things, by similar pretended agency, and what they do is of equal value to society. We do not propose to hang mediums; but in the name of common sense, and for the credit of the nineteenth century, let them starve or find an honest livelihood.

THE Revisions, Reports, and Regulations of the Medical Council will probably to a great extent effect the object in view, of raising the standard of general and professional education amongst medical students. In the meantime, however, the medical student, who must suffer heavy penalties if he fail to comply with the Reports and Regulations, is sadly perplexed to discover what he is required to do. And he gets very little satisfaction by applying to the Registrar of the General Council. That officer, indeed, has given a reply to a correspondent upon the subject which appears to convey some information of general interest. Dr. HAWKINS protests that this letter is strictly special, and ought not to have been published. But since it contains apparently the most intelligible statement we have yet seen of what the Council exacts in a matter of urgent public importance, we venture to print it once again:—

"20th August, 1860.

"SIR,—I cannot answer your inquiries more definitely than by saying that professional study is considered to commence with the first entrance and *attendance* at a recognised hospital and medical school. Apprenticeship or pupilage is not of itself professional study. All students, therefore, who do not enter and *attend* at a medical school or hospital during the ensuing session 1860-61 will be obliged to conform to all the regulations of the Medical Council, which will come into operation before the commencement of the following medical session 1861-62—i. e., they must pass an examination in general education, must then be registered by one or more of the bodies named in Schedule (A) of the Medical Act, and afterwards pursue professional studies during at least four years.

"I am, Sir, your obedient servant,

"_____." "FRANCIS HAWKINS.

Now we find Dr. HAWKINS, in a communication to ourselves printed in this journal last week, repudiating this letter as applicable to students in general. It is true "*all* students" who do not "enter and *attend* at a medical school or hospital during the session 1860-61" will come within the scope of certain specified regulations. Still all students, except the gentleman specially addressed, are warned not to apply this to their own cases. We are fairly puzzled; and do not wonder that Dr. HAWKINS has received inquiries "increased in number" for explanation. Until the Council shall be pleased to issue an authentic and definite statement—which would be more satisfactory if attested by the signature of the President as well as by that of the Registrar—it is highly probable that Dr. HAWKINS will be troubled with yet a great many more individual inquiries. Nor do we think that Dr. HAWKINS himself, on further reflection, will be of opinion that he is entitled to evade particular answers to these applications by referring his correspondents "to the examining and qualifying boards." The Medical Council is supreme over all boards. It has resolved upon certain general regulations which affects *all students and all examining boards*. Surely every student, anyone interested in a student, or even any member of the general public, has a right to know from the only authentic source, the Council itself, what it is the said Council has decreed.

That a definite statement, in a compact form, freed from all extraneous matter, is necessary, we can testify from our own experience. We have taken pains to publish from time to time the reports of the proceedings of the Council, and every document issued by it to the profession. It is true the Council sits in private. The press is not admitted to its deliberations. We may, therefore, have omitted to inform the profession concerning several matters which ought to be known. But this only renders it the more incumbent upon the Council to be very full and explicit in its communications to the public. In our Students' Number, we were careful to head the Regulations of the various Examining Boards by the "Report of the General Committee on Education," which was adopted by the General Council on the 23rd of June last. Notwithstanding this, we, like Dr. HAWKINS, are besieged with anxious inquiries. This is enough to show that there are many persons who are at a loss to make out what the Council means. This the Council only can solve. Neither we, nor the Examining Boards, can be expected to interpret the decrees of the Council or the glosses of the Registrar. Hitherto we thought we could give a sufficient reply by referring our correspondents to the official documents of the Council, and the explanations of its executive officer. But since the Registrar informs us that his explanations have not a general application, and that "he is in the habit of referring inquirers to the Examinin

Boards," the whole matter has become involved in obscurity and doubt. It is high time for the Council to issue a compendious statement of all and several of its Regulations affecting students present and future, in such a manner as to be accessible to everyone. Copies should be suspended in every school, duly authenticated, and so clearly expressed, that all who run may read, and all who read may understand. When this shall be done, Dr. HAWKINS may then be legitimately "relieved from inquiries upon these subjects," by adopting that most convenient and approved red-tape expedient of directing a clerk to enclose a printed statement to his correspondents.

THE movement of the troops from Hong Kong to the rendezvous at Talien Hwan Bay, upon the northern shore of the Yellow Sea, has been attended by some circumstances interesting to the profession and important to the public at large, as showing how much room there is yet for improvement in the victualling of our fighting men. As the first division of the expeditionary force was preparing to leave, such a tropical storm of rain occurred, that on the representation of the senior medical officer the order for embarking was countermanded, and thus the baggage was saved, and the men kept once more upon dry bedding. It rained the next day, however, and then routine, discipline, and orders were allowed to prevail over medical suggestions. The men embarked wet, and wet they remained for several days. There existed no means for drying. The results are not surprising. We are told that fever, catarrh, and diarrhœa prevailed to such an extent that the majority of the men on board were rendered unfit for duty during the first week, and some did not recover for a month afterwards. It is well known that in China fever is very easily contracted, but shaken off with great difficulty, frequently passing into the severest typhoid form, and leaving its victims miserable wrecks of their former selves. It is apt also to initiate an obstinate chronic diarrhœa, extremely rebellious under treatment. Although not any fatal cases occurred during the voyage to the Yellow Sea, yet several of the strongest men were so much reduced as to be rendered unfit for active service for some time. But a cause of sickness distinct from weather and climate soon made its appearance—a cause which seems to follow our soldiers about wherever they go, and to be almost a necessary element of the transport service. This was defective provisions. The first transport ship that arrived about the beginning of June at Talien Hwan Bay was supposed to have been an exceptional sufferer; but by the 20th of June nearly thirty transports had made the passage with troops, and the majority urged the same complaint against the Commissariat supplies as the first vessel had. The complaint made was, that the salt pork provided by the Commissariat at Hong Kong was unfit for consumption. All the available pork, it is stated, in the merchants' stores at Victoria was bought up and shipped for this especial purpose, in order that the Commissariat stores might remain intact for future use. There was no brand upon the casks containing this pork, by which the date of its preparation might be shown. This would have betrayed a commercial secret, and gone far to render the meat unsaleable. The moment the head of a cask was started, sulphuretted hydrogen was evolved in such quantity as to render it next to impossible to approach the vessel. Upon opening and carefully examining one barrel, it was found to contain nothing beyond a mass of black and putrid filth! As a matter of course, it was instantly thrown overboard. Several casks were said to contain "a superior quality of pork." The flavour of this latter is stated to have been "not quite so high;" but when cooked, the muscular parts displayed a tint of dark green, gradually deepening to jet—a colour not usually met with in wholesome food. Fortunately the salt-meat ration had not been confined to pork, as a quantity of beef in a better state had been included in the supplies for the voyage. Thus the men were saved from a bread-and-water diet—one that certainly would not have added to their efficiency for active service.

The "special correspondent" of the *Indian Lancet* of August 15th, to whose relation of these events we stand indebted, admits that the gentlemen of the Commissariat had a very arduous task to perform when they were called upon to purvey for so large a force in a country where salted food is not commonly prepared or used. But, as this gentleman truly observes, they had no right to hazard the success of an expedition like the present by issuing supplies that a dog would not touch, especially when they had the means of ascertaining by "Boards of Survey" that these supplies were at least in sound condition. This applies more particularly to provisions intended for use at sea, where, if they turn out bad, frequently not any substitute can be found in their place. Since the arrival of the troops at Talien Hwan Bay, a great difficulty has been experienced in obtaining fresh provisions. We are told that the villagers around the Bay had driven all their cattle inland beyond the mountain range, that forms a sort of landward barrier, nor can they be induced to bring forward supplies "even by the sight of the almighty dollar." The supply of live stock in most of the transports had been exhausted, and consequently nearly everyone was obliged to live upon salt provisions. Under such circumstances, it would behove the commanding heads of the expedition to make all judicious haste in bringing Mr. Chinaman to his senses—i. e., to beg our pardon, and send us plenty of sheep and bullocks; for although the post upon the Yellow Sea is said to possess a fine bracing temperature, contributing much to the maintenance of health and the recovery of the sick, yet campaigning upon salt provisions, under such desultory warfare as Chinese fighting is usually composed of, is by no means calculated to keep up soldiers' health and spirits, if they are forced to continue it for any length of time.

VIVISECTION AT ALFORT.

THE paths of physiology do not always lie in pleasant places. If revolutions are not made with rose water, neither are scientific errors in the doctrine of life subverted, nor truths established by *dilettante* scribes. Truth must be sought by the laborious investigation of visible nature. A great part of this labour can be accomplished by the examination of the dead tissue. Nearly all that relates to structure, or organization, size, shape, relative position, and other statical conditions, may be discerned by post-mortem observations. Such investigations have not always been free from the obstruction of prejudice; but they are not obnoxious to the charge of cruelty. In all that relates to function or dynamical qualities, death, which renders the muscles powerless, stills the beating heart, and arrests the progress of all glandular action, is fatal to the investigation. Hence all the great acquisitions to medical science in this century, and notably those which have taught us the functions of the nervous system, and the pro-

cesses of digestion, have been effected by the intelligent study of the living parts of the animal system submitted to experiments. Dogs and cats, rabbits and frogs, and occasionally animals of even larger growth, have, it must be confessed, suffered many pangs in the progress of these experiments. But only a few enthusiasts will be found to think too dearly bought at the cost of this minimum of necessary suffering inflicted, the vast discoveries of Bell, of Marshall Hall, of Magendie, or of Brown-Séquard—discoveries which place the art of healing upon a firmer basis, and tend for ever to contribute to the welfare and restoration to health of suffering mankind. The majority of men will always agree to regard vivisection, when confined within the bounds of rigorous necessity, not amongst acts of cruelty, but as a means of scientific progress, and, therefore, an aid to the real welfare of humanity.

The defence of vivisection must, however, close here. The moment that it overpasses the bounds of necessity—when it ceases to aim at the solution of problems in which humanity is interested, and becomes a new means of public demonstration, having no benevolent end—then it is degraded to the level of a purposeless cruelty. The repetitive demonstration of known facts by public or private vivisections is an abuse which we deplore, and have more than once condemned. Thus the exhibitions at the veterinary amphitheatres of Alfort and elsewhere in France have always been to us subjects of painful regret, which we have not hesitated to express. The repeated torture of enfeebled animals for the instruction of students is not justified by any sufficient human interest. The example of veterinary colleges in this country has proved that they are not needed for the education of the student; and, indeed, it is difficult to understand why it should ever have been imagined that the student of veterinary surgery cannot learn as much from the study of the dead subject, as does the student of human surgery. The displays of these amphitheatres are of the most painful kind, and admit of no sufficient excuse. But that two distinct propositions may not be confounded, we repeat the conviction that when employed with due care for humanity, and for necessary purposes of original investigation only, the practice of vivisection is permissible and even laudable. Our English experimenters are in the habit of removing the subjects of their experiments from the sphere of sensation by narcotism by ether, chloroform, vapour of puff-ball, or local congelation. This procedure should never be omitted on any fitting occasion. Guided by these rules, and tenderly observant of the considerations of humanity, our English physiologists and surgeons have risen to the first rank in the world of science, to whose treasures they have made some of the noblest contributions. Their example may be proudly noted, and their course profitably imitated.

THE DECADENCE OF RACES.

WHY does the access of civilized races prove fatal to the aboriginal tribes of new countries? New Zealand affords a fresh occasion for studying this important ethnological problem, already prominently put forward by the progress of decay of the North and South American Indians. The aboriginal New Zealanders are rapidly fading away in the presence of our colonists, belonging to a race of higher energy and superior intellectual power. From a recently published report on this subject, it appears that in the last decade the decrease of population amounts to one-fifth of the whole.

This rapid diminution cannot be ascribed to such causes as were supposed to lead to the destruction of the Indian tribes. Small-pox has not laid waste the population of New Zealand, nor have they been desolated by other violent epidemics. Drunkenness is hardly known; the consumption of spirits is diminishing, and the supply has always been small. Thus the decadence of the Maöris cannot be clearly traced to any habits or diseases introduced by the colonists; nevertheless the evidence of trustworthy persons goes to show that most of the diseases which have raged in the island since its colonization have been of European origin.

It may be noted that the Maöris themselves attribute their deterioration to the change of food and introduction of clothing: they look to the epoch of fern-roots and nudity as a golden era of happiness and health. The Government agents attribute the decrease to depopulating intestine wars, frequent infanticide, illicit sexual commerce, constant intermixture of blood and the use of unwholesome food. Infanticide was formerly practised to a frightful extent: women have been known to kill six or seven of their children; but the crime is now nearly extinct, and of recent years could have had no influence. Uncleanliness, in connexion with dress and pseudo-civilized habits, is no doubt a powerful cause. Constant intermarriage has largely tended to debase the race, which presents now all the characters of an effete and debile stock. But no influence would seem to have been stronger than that of unwholesome food. In 1830, the Maöri population acquired the art of rendering corn putrid by steeping it in water, and the taste for eating the mess in a state of offensive putrescence. Since this time the decadence of the population has been most marked. Where the persuasions of the missionaries and other influence have substituted sound wheat as food, the mortality has been lessened by 33 per cent. This decomposing food is, of course, wholly destructive of health; and Mr. Fenton is thoroughly justified in attributing to habitual indulgence in a putrid vegetable diet a long train of diseases, of which scrofula is the most disastrous, and which enfeeble the vitality and shorten the existence of the Maöris. A slight illness, which an European would scarcely feel, prostrates a New Zealander almost beyond recovery.

A VILLAGE HOSPITAL.

THE management of cases of accident and severe illness amongst the poor in rural districts constantly offers the most serious difficulties to the surgeon. If there should happen to be a large hospital near at hand, or within a convenient distance, the difficulty is quickly solved by transporting the patient to that establishment, where all his wants are anticipated, and the necessities of his case supplied. In remote villages, in isolated districts, and in localities where the hospital is far distant or its accommodation insufficient, the patient must suffer greatly from the absence of all the appliances and the kind of nursing and attendance which only such an institution can afford. A well-devised effort, made at the village of Crawley, successfully meets these shortcomings in that district, and may serve as a model to be usefully copied elsewhere. The Crawley Village Hospital consists of a cottage, which the rector lends rent free. It is designed for the accommodation of the poor when suffering from sickness or from accident. The establishment is composed of a nurse and a servant; a lady has also promised the benefit of her assistance in special cases. The institution has now been working a year, during which period twenty-two cases of accident and disease have been successfully treated, at an expenditure apparently not exceeding £60. The number of beds is now fixed at six. Placed in the midst of a healthy atmosphere, and each of them the object of anxious and special care, the patients are favourably situated for cure. Crawley Village Hospital is a sensible and useful development of local philanthropy, for which we desire permanence and a rich fruition of useful works. Like the Military Hospital at Renkioi, such an establishment enjoys the immense advantage of being capable of indefinite increase according to need, without impairing its sanitary principle of isolation. You have but to add cottage to cottage.

APPOINTMENT. — Mr. Edmund Lloyd, late House-Surgeon to the Wakefield Hospital and Dispensary, has, on the recommendation of Dr. Waller Lewis, been appointed Assistant Medical Officer to the General Post-office.

Correspondence.

"Audi alteram partem."

STATISTICS OF STILL-BIRTHS.

To the Editor of THE LANCET.

SIR,—I beg to transmit for publication the particulars of those midwifery cases occurring in my practice during the past five years, in which the children were still-born:—

Years.	Cases.	Still-born.
1855	90	4
1856	114	1
1857	88	2
1858	101	3
1859	99	6
	492	16 = about 3 per cent.

Of those occurring in 1855, one was quite putrid; two wherein delay occurred in the passage of the head, after turning, in arm presentation; and, in the fourth, the child was born on my arrival, the woman being attended by a midwife.

In the case I attended in 1856, the child was putrid. No assignable cause.

In 1857, in the one case, the arm and funis presented; pulsation had ceased; turned. In the other, a case of placenta prævia about the eighth month of pregnancy, considerable hæmorrhage occurred at intervals for a fortnight; turned; no great delay in passage of the head.

1858.—Case of placenta prævia, seventh month; hæmorrhage for three days; turned with some difficulty; no delay; child expelled by natural efforts immediately turning was effected. In the second case, no assignable cause. In the third, one of arm presentation, there was no delay after turning.

In the current year, three were born from two to three months prematurely, and all putrid. One was born on my arrival; no cause apparent. In another there was no assignable cause; the mother, in this case, had had three children born dead previously. In the last, a case of twins, the second child had the shoulder presenting; turned; no delay.

From the relative proportion of still-born children to the number of births here recorded, it will be seen that the average is exactly that stated in Dr. R. U. West's report, published in THE LANCET; and it will be interesting to learn, from reports which may hereafter be published, the different rates of still-born children in town and country. It will be seen by Mr. Smith's report that the ratio in his practice is 1 per cent. over the country, whilst in that of Mr. Hadaway it is 6 per cent. in excess of country practice.

I remain, Sir, your obedient servant,

Coningsby, near Boston, 1860. HENRY LAMBDEN, M.R.C.S.

NAVAL MEDICAL OFFICERS.

To the Editor of THE LANCET.

SIR,—After an improper delay of more than a year, the Admiralty, in a circular of the 3rd of July last, makes the changes in the naval medical uniform which were rendered necessary by the Queen's Order in Council of May 13th, 1859.

In the new regulations there are two errors. Inspectors are given the uniform of first-class commodores (who rank with brigadier-generals); but after three years' full-pay service, inspectors rank with major-generals (who rank with rear-admirals), and are consequently entitled, after three years' service, to the uniform (with the "exceptions,") of rear-admirals.

The second error is, that the director-general is given the uniform of a rear-admiral; but as an inspector, after three years, ranks with a major-general and with a rear-admiral, it is evident that the director-general must hold a rank higher than this. He must rank with a lieutenant-general and a vice-admiral. The proper way would be for him to rank thus at first, and after three years' full-pay service to rank with a general. The director-general should have the uniform (with the exceptions) of a vice-admiral.

Other details are of less moment. The single-breasted coat is inconvenient, and when open looks in bad taste. Having the buttons in threes is distinction enough. The introduction of silver edging is wrong. Naval medical officers have a right to as much "finery" as the sea officers of the same rank.

The July Navy List contains the same error as before, in not putting the staff-surgeons in a list by themselves.

I am, Sir, your obedient servant,

September, 1860. FULL MEASURE, R.N.

PARISIAN MEDICAL INTELLIGENCE.

(FROM OUR SPECIAL CORRESPONDENT.)

I FIND that I have unintentionally wounded, at all events one, and perhaps many, of the "alienists," by the use of a homely synonym—the only one that suggested itself to my mind at the moment, when recording M. Baillarger's observations on the "Comparative Frequency of General Paralysis in the two Sexes." Not wishing Dr. Hitchman to think that the *gaucherie* of expression was premeditated, I beg herewith to register my regret and apology for the *lapsus pennæ*. Having finished the last mouthful of my humble pie, and pulling up my runaway *goose*-quill into a steady walk, let me tell Dr. Hitchman a few very sad truths regarding the general impermeability of the French mind to the stream of scientific research which flows from without. No fact, however palpable or self-evident, is accepted on this side the channel, even temporarily, *on trust*, unless previously endorsed by some French authority of acknowledged respectability. Science in France seems to have adopted for herself the political motto of Italy; the *fara-da-se* principle is carried out to the almost total exclusion of any other; and, whether from jealousy, or whether from distrust of the exactness of foreign observers, I know not, but questions which in England have long been satisfactorily settled, and from the solutions of which positive advantages may long have been reaped, are here, from time to time, revived, reconsidered, and then relinquished in the same permanent state of indecision.

Of late, and principally through the agency of the foreign correspondents of the Societies of Surgery and Biology, a few ideas, not natives of French soil, have penetrated into the exclusive medical coterie; but these are few and far between, and their influence has not risen above the younger generation of practitioners. Consequently, it is very possible that, though Dr. Hitchman's claim of priority in favour of England be perfectly just, MM. Baillarger, Brierre de Boismont, Billod, and Combes may be in utter ignorance of the conclusions previously arrived at by Dr. Conolly and the English "alienist" school.

Whilst on the subject, let me lay before you the details of a case lately reported to the Academy of Medicine by Professor Bouisson, occupant of the Chair of Clinical Surgery at the Montpellier Faculty of Medicine. An insane patient, under the care of M. Bouisson, was found to be gradually becoming blind, and the presence of a double cataract was diagnosed. When the lenticular opacity was judged to be sufficiently advanced in maturity, an operation for the removal of the diseased crystalline bodies was performed, and, to the astonishment of the operator and the assistants, the recovery of vision was followed by a complete re-establishment of the intellectual faculties. That the recovery of the intellect was a consequence, and not a coincidence, and that the operation had been the means of restoring to the patient both the power of sight and his sanity of mind, Professor Bouisson does not seem to doubt for an instant, as he affirms that this is one of those exceptional cases in which the art of surgery has been able to push her beneficent influence beyond the limits of the material world into the domain of psychology. The case is a curious one, and the results of the operation most gratifying. The patient entered the hospital a blind idiot; the cataractous lenses were couched, and six weeks afterwards he was able to return home in possession of both reason and vision, and fit for the task of earning his bread.

M. Pouchet, whose name I mentioned in a former letter as the champion of the theory of spontaneous generation, is determined that the *vexata quæstio* shall not long remain in abeyance. Despite the refutation of the most important of his arguments by M. Pasteur,—despite a whole legion of experiments registered by his numerous opponents, clearly disproving his theory in so far at least as the spontaneity of the generative process is concerned,—the indomitable professor is now heard

of from Messina, where he has halted during the course of a scientific tour, for the purpose of making sundry atmospheric analyses for the benefit of the Academy of Sciences. M. Pouchet's object at the present stage of the discussion is to upset, in favour of his own, the theory of the Panspermists—that, namely, which supposes the ubiquitous existence in the atmosphere of an infinite quantity of every possible variety of insect germ. A letter, bearing upon the experiments undertaken in the above sense, was read at the last meeting of the Academy of Sciences. From this communication it appears that M. Pouchet has submitted to analytical examination not only the air of the Mediterranean, procured far out at sea between Sardinia and Sicily, but also that of certain marshy districts in the latter island, of its towns, and lastly of the summit of Etna. He has found that each sample differed very remarkably from the other, inasmuch as the atmosphere of towns contains a great deal of effete organic material; that of marshy districts, great quantities of vegetable matter; whilst air procured some distance out at sea, or from the mountain tops above the vegetable range, is peculiarly pure and free from heterogeneous ingredients, and the atmospheric corpuscles present are not only very rare, but very small. "Notwithstanding all which facts," says M. Pouchet, "whether I operated with the sea air or with the land air, I was always able to generate myriads of ciliated infusoria." "Very possibly," will reply M. Pasteur; "but why can you not produce your infusoria in air which has been torrefied?" This question M. Pouchet has always declined answering or discussing; and he is right, if he wishes his flimsy theory to survive the next winter's campaign.

Having noticed that one or two of your correspondents have applied to you for particulars concerning the French mode of treating acne, I think it may be agreeable to them if I detail the plan usually resorted to by M. Hardy, of the St. Louis Hospital, in this unsightly affection of the skin. This practitioner considers acne to be of an entirely local character; his plan of treatment, therefore, consists simply in the employment of external applications, including one or other of the preparations of mercury. These remedies act, in his opinion, by producing irritation, and an increased or modified action which supersedes the morbid tendency. The formula for a lotion, to be used night and morning, is as follows:—Bichloride of mercury, fifteen grains; rectified spirits of wine, half an ounce; water to four ounces: mix. A teaspoonful of the above, in a large wineglassful of *tepid* water, to be employed for bathing the parts affected with the eruption. M. Hardy particularly insists upon the necessity of employing *tepid* water, in order to avoid the provocation of reaction and the determination of an increased afflux of blood to the skin. Three other salts of mercury have been found very useful by this practitioner in cases of acne: they are, the protiodide, the biniodide, and ioduretted chloride of mercury. M. Hardy, however, generally prefers the first, which he prescribes as in the following formula:—Prepared lard, one ounce; protiodide of mercury, eight grains: make an ointment. M. Hardy recommends friction with this ointment, to be repeated each night; if the affection prove obstinate the dose of mercury is increased; and, when feasible, the patient should be sent to Barèges, Bagnères de Luchon, Louesche in Switzerland, or Aix en Savoie. I remember, about eight years ago, being told at the latter place, by one of the resident medical men—M. le Dr. Vidal—that a daily bath of the Eau d'Alun (one of the Aix springs is so called), and three tumblers of Marliox water taken in the morning, were infallible in the cure of acne. I must, however, confess, at the same time, that in the only case in which I saw the Aix plan tried, it most signally failed. The patient was eventually cured by creosote administered internally, and by abstemious diet.

Dr. Hamon, of Fresnay, recently sent in for the consideration of the Academy of Medicine a paper containing certain views "On the Veritable Nature of Albuminuria," which seem to consist in a modification of the opinions expressed in 1829 by Dr. Christison. Dr. Hamon's proposition is, that albuminuria is in reality an affection arising originally, not from local disease of the kidney, but from a peculiar derangement of the cerebro-spinal and ganglionic systems. He brings to the support of this theory an experiment of M. Claude Bernard, which proves that by pricking the root of the fourth ventricle in a certain point the urine of a dog can be rendered albuminous; also, the general fact that causes which influence the cerebro-spinal system are known directly to modify the amount of albumen found in the renal secretion. As M. Hamon considers the renal affection to be a consequence of the nervous disorder, and as he believes it important that attention should be directed more especially to the *fons et origo mali*, he suggests that the title of *albuminurrheic neurosis* be generally adopted in the designation of this disease, as one more correctly indicative of its particular nature and origin.

The Administrative Council of the department of the Seine has just organized a medical service at St. Ann's farm, in the suburbs of Paris. This establishment was opened about twenty years ago by M. Ferrus, medical inspector of the insane department of Bicêtre, and used as a sort of sanitarium for the patients, who, when sufficiently quiet, were employed in agricultural pursuits. It is only within the last few weeks, however, that a regular medical service has been specially entrusted with the supervision of this institution.

Paris, Oct. 18th.

Medical News.

ROYAL COLLEGE OF SURGEONS.—The following Members having undergone the necessary examinations, were admitted Licentiates in Midwifery, at a meeting of the Board on the 17th inst.:—

Coleman, Alfred, Wandsworth; diploma of membership dated April 20, 1860.
Cooke, William, Tunbridge, Kent; April 5, 1822.
Crawford, Cooper Hayes, Stafford; March 7, 1856.
Dawson, Frederick, Islington; April 19, 1860.
Farrington, William Hicks, Ottery St. Mary, Devon; April 15, 1859.
Grabham, Charles, Rochford, Essex; April 11, 1859.
Harris, John Charles, Chipping Norton; April 18, 1859.
Iliffe, Robert, Coventry; Aug. 2, 1860.
March, Henry Colley, Rochdale; April 20, 1860.
Metcalfe, Richard, Hawes, Wensleydale; April 12, 1860.
Neil, George Michael, Colombo, Ceylon; March 14, 1859.
Richards, John Smith Crosland, Bedford-square; Aug. 1, 1860.
Spaull, Barnard Edward, Hammersmith; April 6, 1854.
Williams, William, Penrhyn, Holyhead; Nov. 12, 1858.

APOTHECARIES' HALL.—The following gentlemen passed their examination in the science and practice of medicine, and received certificates to practise, on

Thursday, October 11th, 1860.

Dean, Octavius, Manchester.
Furner, Charles, King's-road, Brighton.
Hancock, Robert, Bath, Somerset.
Keele, Charles Ferdinand, Portswood, Southampton.
Monckton, Alfred, Brenchly, Kent.
Olive, Eustace Henry, Linton-terrace, Hastings.
Worthington, Francis Samuel, Lowestoft, Suffolk.

The following gentlemen also on the same day passed their first examination:—

Hooper, John Harward, Upton Warren, Worcestershire.
Lees, Joseph, Wolverhampton.
Watson, Forbes, Aldersgate-street.
Williams, Samuel White Duckworth, Gloucester.

ASSOCIATION OF THE FELLOWS AND LICENTIATES OF THE KING AND QUEEN'S COLLEGE OF PHYSICIANS, IRELAND.—The following is a list of officers for the Session 1860-61:—*President:* Dr. Corrigan.—*Vice-Presidents:* Drs. O'Reilly and O'Brien Adams.—*Council:* Drs. Henry Kennedy, Lombe Atthill, Edward B. Sinclair, Alfred H. McClintock, and Robert Law.—*Treasurer:* Dr. George A. Kennedy.—*Secretary:* Dr. William Moore.—The meetings of the Association are held in the College Hall (Sir P. Dun's Hospital), on the evenings of the first Wednesday in every month during the session, at eight o'clock.

A LIBERAL OFFER.—A London merchant, whose daughter has derived great benefit from the climate of Torquay, has offered to give £500 towards the completion of the Hospital for Consumption, provided £1000 be raised for the same purpose within a month.

THE EMPEROR OF FRANCE AND THE HOSPITALS OF ALGERIA.—On the 28th ult., the Emperor, whilst at Algiers, decreed that certain lands in the three provinces of the French possessions of Northern Africa should be given to the civil hospitals.

SUDDEN DEATH.—Dr. Rathke, Professor of Zoology at the University of Königsberg, died of apoplexy on the evening previous to the day on which he was to preside at the Congress of Naturalists.

THE SOCIAL EVIL IN ITALY.—M. Sperino, chief surgeon of the Venereal Hospital of Milan, has obtained from the Government an order that the examination of registered females should be made twice a week at that city, as has hitherto been adopted in the Sardinian capital. This is a most important measure, and likely to diminish the spread of venereal affections. At Paris the examinations are made once a week only. This is obviously insufficient.

ROYAL COLLEGE OF SURGEONS. — In analyzing the newly-published list of Fellows, &c., of this institution, we find that 249 members of the College have been admitted Fellows by examination—an excess of only 16 over the number of last year. The number of honorary Fellows amounts to 1018, being an excess of only 25 over the number published last year. The gross number of Fellows now amounts to 1267; and of members there appear to be nearly 14,000. The Licentiates in Midwifery now amount to 769—just 60 over the number of last year. The persons who have received the certificate of qualification in Dental Surgery during the past year, and now for the first time published in the list of Fellows, Members, and Licentiates in Midwifery, amount to exactly 100.

PARIS HOSPITAL STATISTICS.—A measure of great importance has just been adopted by the Committee of Management of the Hospitals of Paris—viz., the appointment of commissioners to propose a plan of general registration of cases comprising all the nosocomial establishments of the capital. These commissioners have been chosen from amongst the physicians and surgeons of the Paris hospitals.

THE CRETINS OF SAVOY.—The French Emperor, in the course of his passage through Grenoble, had a long conversation with Dr. Niepce on the causes of goitre and cretinism, of which affections his Majesty had seen some examples in his tour through Savoy. The Emperor presented the cross of the Legion of Honour to Dr. Niepce, who has written a valuable work on the subject, which obtained the prize offered by the Academy of Sciences. His Majesty also announced his intention to encourage researches on these diseases by offering a premium for the best essay on the question.

ACCIDENTS TO MEDICAL MEN WHILE SHOOTING.—The *Gazette des Hôpitaux* mentions that two medical practitioners lately met with their death by the accidental discharge of their guns. They were both young, and practised, one at Le Mans, and the other at Villefagnan (Charente). The first of these unfortunate gentlemen had, after the discharge of one barrel, blown into it, as is too much the custom, and the second barrel had gone off whilst he was thus engaged.

TORQUAY INFIRMARY.—A wing has lately been added to this infirmary for the reception of fever patients. Upwards of 1500 cubic feet of space is allowed for each patient. The wards are twenty-four feet wide, and sixteen feet high, with windows carried up to within a foot of the ceiling on three sides, and the fourth is provided with ventilating screens of perforated zinc controlled by flaps. In addition to this, an exhausting shaft passes over each line of beds above the ceiling, with ventilators at intervals, and these communicate with a flue carried up in the chimney stack. The heating is by open fire-places. The probable cost, including fittings and furniture, will be about £90 per patient.

CAMBRIDGE.—On Monday evening last, Dr. Humphry delivered a lecture, at the Town-hall, under the auspices of the Church of England Young Men's Society, upon the "Human Hand." The learned doctor, in the course of his elaborate remarks, described the anatomical construction of the arm, the bones which composed it, and also those of the fingers. The thumb consisted of three bones—the metacarpal and two phalanges; and having shown from a diagram the position and uses for which they were made, he condemned the idea of ignorant persons supposing that there were small bones in the arm. Neither were there any in the leg till we came to the foot; nor in the arm till we came to the wrist. Owing, however to the ignorance which prevailed upon this subject, persons still had an infatuation for small bones. They applied to quack-doctors, who prescribed remedies to replace the "small bone;" and, consequently, many persons were mutilated year by year. There were no small bones, as he had said, till they came to the wrist, and there they were so wonderfully bound together that in his experience dislocation had scarcely ever taken place, and when it did it was, in his opinion, a breakage rather than a dislocation. The wonderful construction of the upper and lower limbs was scientifically described, with a view to prove how admirably adapted they were to perform their functions. Exercise, to produce proper development of the muscles, was recommended by the lecturer; but the ladies, who did not occupy themselves in the same way that the gentlemen did, he advised to brush out their back hair as often as they pleased. The processes of pronation and supination were explained, and the fact of persons possessing so much muscular power in the arms was traced to the preponderance of the biceps muscle. The small bones at the wrist, he said, contributed to protect the arm from blows. The formation and adaptation of all the fingers were dwelt upon, reasons being given for their differing in length. The hand, moreover, was the organ of the will—a faculty given to man to enable him to be a reasonable servant of his Maker. The sensitive element of the hand, lips, and tongue, was dwelt upon. The skin of the hand was most clearly defined, and so were also the nails on the fingers; and while dwelling upon the latter he disabused the minds of his hearers upon the popular notion that cuts of the nails produced lock-jaw. Why persons could use the right hand better than they could the left, he could give no anatomical explanation; he could only account for the difference from the fact of the constant use of the one as compared with the other. In conclusion, he remarked that they might be assured that our Maker, who had thus formed our body suited to every kind of science and labour, had with it given us a share of responsibility.—A cordial vote of thanks was accorded to the lecturer.

SIGHT AND REASON RESTORED TO AN INSANE PATIENT BY AN OPERATION FOR CATARACT.—This interesting case is referred to in our Paris letter of this week, and the following are some additional particulars:—M. Bouisson, Professor at the Faculty of Montpelier, lately communicated to the Academy of Medicine the case of a man aged fifty, who was brought to the hospital without any particulars of his case. He was suffering from double lenticular cataract, and from complete dementia. Couching was resorted to for both eyes; and, on the tenth day after the operation, the man said, "I can see!" these being the first sensible words he had spoken. As the sight improved, the man became more manageable. He began to give some details as to the origin of his ailments; and, six weeks after the date of his entrance into the hospital, the patient left, fully capable of earning his own livelihood. To these facts Professor Bouisson added some valuable remarks as to the probable connexion between the restoration of sight and the return of intelligence; and stated that he considered that "sensation stimulated the mind as electricity stimulates nervous action, the patient being at the time favourably situated for such impressions." The dementia was probably not deeply rooted, and the organ of sight being that which affords the most vivid sensations, the results have been extremely beneficial as to the patient's state of mind.

HEALTH OF LONDON DURING THE WEEK ENDING SATURDAY, OCTOBER 13TH.—In the week ending Saturday, Oct. 13th, the deaths registered in London were 1008. The mortality from small-pox continues low, the deaths from this disease recorded being only 3. From diarrhœa there were 42 deaths; 48 from scarlatina, 39 from measles, and 10 from diphtheria. Two widows died, one at the age of ninety years, the other aged ninety-four years.

Last week the births of 876 boys and 813 girls, in all 1689 children, were registered in London. In the ten corresponding weeks of the years 1850–59 the average number was 1578.

Births, Marriages, and Deaths.

BIRTHS.

On the 1st inst., at Berners-street, the wife of W. R. Rogers, M.D., of a daughter.

On the 9th inst., at Vienna Villa, Ryde, Isle of Wight, the wife of Benjamin Archer Kent, M.D., of a son.

On the 12th inst., at Chorley, Lancashire, the wife of Wm. Pilkington, L.R.C.P. Edin., of a daughter.

On the 14th inst., at Savile-row, the wife of Henry Lee, Esq., F.R.C.S., of a son.

On the 16th inst., at Union-street, Southwark, the wife of Henry Leach, Esq., M.R.C.S., of a daughter.

MARRIAGES.

On the 16th inst., at the parish church, Truro, Henry Fishwick, Esq., to Ellen, youngest daughter of W. H. Bullmore, M.D., and Surgeon to the Royal Cornwall and Devon Miners Artillery Militia.

On the 17th inst., at St. John's Church, Brixton, Matthew Blackman, Esq., Surgeon, to Maria Louisa, third daughter of the late Thomas Stamford Woodley, Esq., of Brixton, Surrey.

DEATHS.

On the 12th inst., at Clifton gardens, in her 91st year, Marion, eldest daughter of the late Hugh James, M.D., of Spanish-town, Jamaica.

On the 12th inst., at Shrewsbury, aged 71, Marianne, widow of the late Thos. Du Gard, M.D.

MEDICAL DIARY OF THE WEEK.

MONDAY, Oct. 22	ROYAL FREE HOSPITAL.—Operations, 2 P.M. METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M. MEDICAL SOCIETY OF LONDON.—8½ P.M. Clinical Discussion.
TUESDAY, Oct. 23	GUY'S HOSPITAL.—Operations, 1½ P.M. WESTMINSTER HOSPITAL.—Operations, 2 P.M.
WEDNESDAY, Oct. 24	MIDDLESEX HOSPITAL.—Operations, 1 P.M. ST. MARY'S HOSPITAL.—Operations, 1 P.M. UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M. ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.
THURSDAY, Oct. 25	ST. GEORGE'S HOSPITAL.—Operations, 1 P.M. CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 1 P.M. LONDON HOSPITAL.—Operations, 1½ P.M. GREAT NORTHERN HOSPITAL, KING'S CROSS.—Operations, 2 P.M.
FRIDAY, Oct. 26	WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1½ P.M.
SATURDAY, Oct. 27	ST. THOMAS'S HOSPITAL.—Operations, 1 P.M. ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1½ P.M. KING'S COLLEGE HOSPITAL.—Operations, 1½ P.M. CHARING-CROSS HOSPITAL.—Operations, 2 P.M.

To Correspondents.

Inquirer, (Birmingham.)—The circular of Mr. J. V. Solomon, having reference to the surgical treatment of short sight, is scarcely in accordance with the rules of professional propriety. Mr. Solomon's "reprint" is, however, open to another objection. In the statement issued, he speaks of the operation of dividing the ciliary muscle as one discovered by himself. Now, this statement must not be allowed to pass without comment. It is well known that Mr. Hancock is entitled to the credit of having originated and performed this operation with great success in many cases of glaucoma. If we mistake not, Mr. Solomon was present at some of Mr. Hancock's operations, which were reported in THE LANCET. It may be said that Mr. Solomon divides the ciliary muscle in a *transverse*, instead of an *oblique* direction; but this at best is only a modification of the proceeding. It would surely have been more consistent with justice and good taste for Mr. Solomon to have indicated the source whence he obtained his knowledge of the principles of the operation, than to have omitted, as he has done, all mention of Mr. Hancock's name. We have thought it our duty to draw the attention of the profession thus pointedly to the subject, not only in relation to the course pursued by Mr. Solomon, but to that of one or two other surgeons. Controversy, when conducted in a spirit of fairness, must always be conducive to the elucidation of truth and the advancement of science. If carried on, however, in an opposite spirit, nothing can be more likely to obstruct the progress of the inquiry. In these remarks we wish it to be understood that any new operation, with whatever authority it may be introduced, or with whatever amount of success it may meet in the hands of its originators, offers a fair subject for just and even rigid criticism; but this criticism, if it is to be of service to the profession and the public, must be conducted in a spirit of equity.

OBSTETRIC STATISTICS.

To the Editor of THE LANCET.

SIR,—Statistics are valuable only when accurately prepared. I observe in a communication with the above heading, in your journal of Sept. 15th, sent by Dr. Richard Cross, of Scarborough, that during 1844, in his practice, he met with the following presentations:—1 side, 2 shoulders, 1 back, and 1 hand (in all 5 cases), yet he only *twice* performed the operation of turning. How, I should like to be informed, was delivery effected in these cases?—Yours, &c.,

HENRY JAMES, F.R.C.S.,
Surgeon and Accoucheur to the City of London Lying-in Hospital.

October, 1860.

Dr. J. G. Davey.—We have received from Dr. Davey, of Northwoods, a paper commenting upon an article upon the Abuse of the Plea of Insanity in Cases of Suicide, which appeared in this Journal on the 25th of August last. As Dr. Davey's observations are based upon a total misconstruction of that article, which a more careful perusal may possibly correct, we do not think it desirable to print his paper.

Dr. P. M'Millan's paper, "On Rupture of the Liver," shall appear on an early occasion.

PROFESSIONAL PUFFING.

To the Editor of THE LANCET.

SIR,—The following paragraph from the *Lincoln and Stamford Mercury* requires no comment. Dr. F. George is utterly unknown to me; but I hope, for the honour of our profession, that he was no party to the publication of this unprofessional advertisement. Your obedient servant,

Watford, October, 1860. NO NONSENSE.

"KIRTON LINDSEY.—A surgical operation of some moment was performed a few days ago at Scotter by Dr. F. George, of this place. A child had been eating apples, and a large piece got fast in the windpipe. Ingress and egress was at an end, and the child was choking fast. By the usual means it was found impossible to extricate the obstruction, and to save the life of the child its 'throat was cut'—i. e., a careful incision of the windpipe was effected, and by this means the 'apple of discord' was at once removed with distinguished success. The child has since quite recovered."

M.D., L.R.C.P., (Wakefield.)—Dr. Waddington was certainly not correct in stating that he was entitled to call himself a doctor of medicine. By courtesy and custom, he is justified in prefixing Dr. to his name. The question of how far the law permits him to do so is still undecided. We do not, from the report forwarded to us, feel at liberty to criticize that portion of Dr. Waddington's evidence which refers to his analysis of the body of Miss Adamson, inasmuch as it is stated that those parts in which arsenic was discovered by Mr. Nunneley had not been previously examined by Dr. Waddington.

S. P. must send his name and address before we can answer the question.

RESUSCITATION FROM CHLOROFORM.

To the Editor of THE LANCET.

SIR,—At the request of my colleagues, I beg to mention the plan which has been used for several years at the Infirmary here for rousing patients from the undue effects of chloroform, and which, thank God, has hitherto been invariably successful.

By vigorously slapping with the flat hand the naked surface of the body and limbs, and by flapping the face and front of the chest with the corner of a wet towel, a deep inspiration is rapidly produced, and the action of the heart is restored, even when the pulse has ceased. This is continued until the breathing, pulse, and colour are natural.

In this port, the great rendezvous of steamships, accidents are severe and numerous, and as chloroform has been employed in all serious operations from the first, the experience of years has given instances in which recovery has been brought about in this way, when both respiration and the pulse had stopped; and in similar but minor conditions, which are alarming, lest they should go further, this simple remedy, which can at once be administered by many bystanders, has constantly succeeded in removing the apparent danger.

The plan is so obvious that it must be often used; but as it is not mentioned in the last inquest on a death from chloroform as one of the means employed, we have thought it our duty to communicate the result of our experience at this Infirmary. (Signed)

ROBT. S. FOWLER,
Senior Surgeon of the Royal South Hants Infirmary.

Southampton, October, 1860.

Mediculus.—With one or two exceptions only, we believe the entries of students have been unusually large this session at all the London Hospital Schools. This is probably owing to the desire to anticipate the more stringent regulations which come into operation in 1861-2.

V. C.—Under the circumstances, and where no arrangements have been made, it is usual for each party to pay his share of the expense.

An Invalid and *R. H. D.* (Birmingham) shall receive private answers if they will forward to us their names and addresses in confidence.

VALUABLE INFORMATION FROM THE NEW SYDENHAM SOCIETY'S YEAR-BOOK.

To the Editor of THE LANCET.

SIR,—In the preface to the new Year-Book, the Editors state that "the reports themselves consist of concise abstracts of the original matter." I open the book at random at p. 452, and find the following:—

"Canella Constantino—Medico-Legal Question. (Italian, 6, 49)."
"Hanska—On Ravishing and the Attempt at Ravishing. (Wiener, 1857, 40)."

The following are the reports appended:—

"The question discussed by Canella is answered upon the basis of the opinions of various authors."

"The paper of Hanska contains meditations on the definitions of rape."

If such "reports" as these are really what they profess to be, is it worth while reporting at all upon the "original matter" of which they are "abstracts?" Your obedient servant,

October, 1860. READER.

Student (Southampton) will find in Dunglison's "Dictionary of Medical Science" that "pathogeny" is that branch of pathology which relates to the generation, production, and development of disease.

Dr. C. J. Hare's communication, if possible, in our next.

A Reader (Temple) shall receive a private note if he will inform us to whom and where it is to be addressed.

Sonorous.—The "Australian Medical Journal."

Alpha.—The proper style is either Dr. Smith, or J. Smith, M.D.

THE PLUMSTEAD, ETC., WATER COMPANY AND DR. CLARK'S SOFTENING PROCESS.

To the Editor of THE LANCET.

SIR,—Referring to the leading article on Water Companies, in your impression of September 15th, the mention of Dr. Clark's process for softening water, as adopted by the Plumstead Company, is followed by the (correct) statement that the commercial working of the Company has not been satisfactory. I think it only fair to Dr. Clark to state that the misfortunes of this Company are not at all attributable to any cost incurred or outlay attendant upon the adoption of his system, which is almost perfect, but to a lamentable dissension amongst the body of which your obedient servant is

London, September, 1860. A SHAREHOLDER.

*** The publication of this note has been inadvertently delayed.—ED. L.

COMMUNICATIONS, LETTERS, &c., have been received from—Dr. Henry Bennet, Paris; Dr. Brown-Séquard; Mr. Hilton; Mr. Hancock; Mr. Darwin; Dr. Hassall; Mr. Fowler; Dr. Kirkman; Dr. W. P. Harris, Futang Port; Dr. P. L. Este; Mr. A. Napper; Dr. Joseph Rogers; Dr. F. M'Millan; Mr. Wm. Parker; Dr. L. O. Fox; Mr. E. Lund; Dr. H. Preke; Mr. Edmund Lloyd; Mr. E. Little, (with enclosure;) Mr. H. W. Lomas, (with enclosure;) Mr. Nason, (with enclosure;) Messrs. Gillon and Co., (with enclosure;) Mr. Mead, (with enclosure;) Mr. W. W. Lloyd, Birmingham; Mr. F. Hatton, (with enclosure;) Dr. Pripp, (with enclosure;) Mr. R. P. Tickler; Mr. G. Archer, (with enclosure;) Mr. Stokes, (with enclosure;) Mr. Wildash; Dr. Goldsmith; Mr. Evershed, (with enclosure;) Mr. J. Johnstone, (with enclosure;) Mr. J. Smith, (with enclosure;) Dr. Macleod, (with enclosure;) Mr. J. R. Nicholson, (with enclosure;) Dr. James Nicholls; A. B., Manchester, (with enclosure;) Medicus, (with enclosure;) W. E. F.; Full Measure, R.N. Student, Southampton; Alpha; A Reader; &c. &c.